



RSCM-12001



RSCM-12002

Internet Camera

Advanced Installation Guide

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CHAPTER 1

Product Overview

1.1 Package Contents

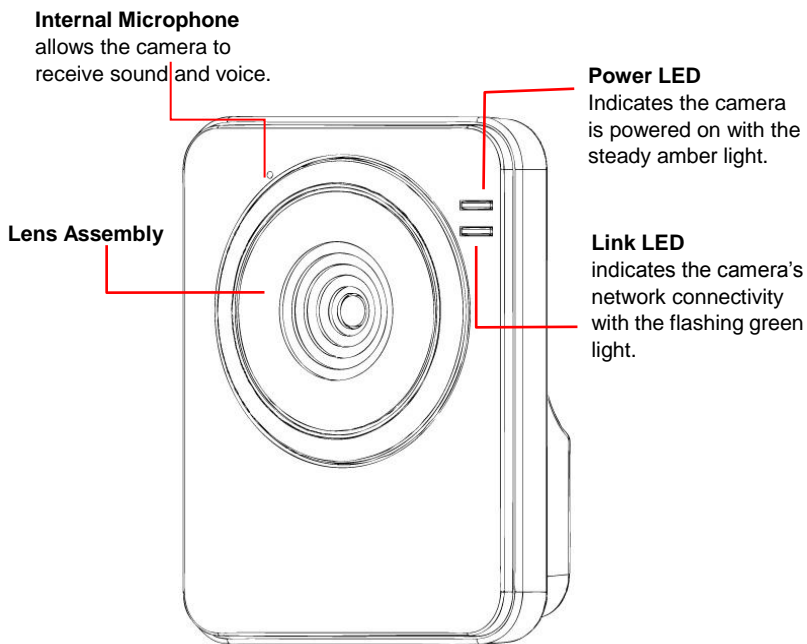
Check the items contained in the package carefully. You should have the following:

- Wireless Internet Camera
- AC Power Adapter.
- Camera Stand.
- Ethernet Cable (RJ-45 type).
- Installation CD-ROM.
- Quick Installation Guide.

NOTE Once any item contained is damaged or missing, contact the authorized dealer of your locale.

1.2 Introduction

Front View



Rear View

Screw Hole

is used to connect the camera stand.

Ethernet Cable Connector

is used to connect the network cable, which supports the NWay protocol so that the camera can detect the network speed automatically.

WPS Button* (for wireless model)

is used to protect your wireless network and for easy wireless connection setup.

Reset Button will restart the camera when it is pressed quickly; when it is long pressed for five seconds, the camera will resume the factory default settings.

DC Power Connector is used to connect the AC power adapter, in order to supply power to the camera.

- For more information of the WPS button, refer to the instruction of the Web Configuration, Network >> Wireless >> WPS Setting.

1.3 Features

■ MJPEG codec Supported

The camera provides you with VGA images by the MJPEG codec technology, allowing you to adjust image size and quality, and bit rate according to the networking environment.

■ 1-way Audio Capability

The built-in microphone of the camera provides on-the-spot audio via the Internet, allowing you to monitor the on-site voice.

■ Remote Control Supported

By using a standard Web browser or the bundled UltraView Pro software application, the administrator can easily change the configuration of the camera via Intranet or Internet. In addition, the camera can be upgraded remotely when a new firmware is available. The users are also allowed to monitor the image and take snapshots via the network.

■ Multiple Platforms Supported

The camera supports multiple network protocols, including TCP/IP, SMTP e-mail, HTTP, and other Internet related protocols. Therefore, you can use the camera in a mixed operating system environment, such as Windows Vista and Windows 7.

■ Multiple Applications Supported

Through the remote access technology, you can use the cameras to monitor various objects and places for your own purposes.

For example, babies at home, patients in the hospital, offices and banks, and more. The camera can capture both still images and video clips, so that you can keep the archives and restore them at any time.

Specification

Model	RSCM-12001		RSCM-12002
Image Sensor			
Image Sensor	1/5" Color CMOS Sensor		
Resolution	640 X 480		
Minimum Illumination	0.7 Lux		
Lens			
Digital Zoom	3x		
Lens Type	Board Lens		
Aperture (F/No.)	2.8		
Focus Length	2.7mm		
View Angel(Horizontal)	52.8 Degree		
View Angel(Vertical)	39.6 Degree		
View Angle(Diagonal)	66 Degree		
Night Vision			
IR-Cut Filter	N/A	Auto	
Illumination Distance	N/A	Up To 5 Meters	
Audio (One-Way)			
Microphone	Built-In Omni-Directional Microphone		
Sensitivity	-48db +/- 3db		
Frequency	50~16000hz		
Audio Codec	PCM (Audio In)		
Video			
Compression	MJPEG		
Auto Exposure	Yes		
Auto White Balance	Yes		
Auto Gain Control	Yes		
Resolution And Frame Rate	VGA (640 X 480) @ 30 FPS QVGA (320 X 240) @ 30 FPS QQVGA (160 X 120) @ 30 FPS		
Networking			
Network Protocols	IPv4, ARP, TCP/IP, UDP, ICMP, DHCP, NTP, DNS, DDNS, SMTP, FTP, HTTP, PPPoE, UPnP and SSL, Bonjour		
Ethernet	IEEE 802.3u 10/100Mbps Auto-MDIX Fast Ethernet		
Wireless	IEEE 802.11 b/g/n Wireless LAN		
Security	64/128-bit WEP, WPA / WPA2-PSK		
Hardware			
System ROM	4MByte NOR Flash		
System RAM	32MByte SDRAM		
Power LED	Orange Color		
Link/Act. LED	Green Color		
Reset Button	Push And Hold Over 5 Sec Will Be Factory Reset		
WPS Button	Yes		
RJ45 Port	X 1		
Antenna	Built-In 2.5dbi Internal Antenna		
Power	DC 5V / 1.2A		
Power Consumption	3.5 Watts Max.	4.5 Watts Max.	
Operation Temperature/Humidity	0°C ~ 45°C (32°F ~ 104°F)/20% ~ 85% (Non-Condensing)		
Storage Temperature/Humidity	-15°C ~ 60°C (5°F ~ 140°F)/0% ~ 90%(Non-Condensing)		
Approvals	FCC/CE class B		
Dimensions (Body Only)	2.9" (W) X 3.7" (H) X 1.2" (D) / 74mm (W) X 95mm (H) X 30.5mm (D)		
Weight (Body Only)	0.19lbs / 85g		

1.4 System Requirement

- Networking
 - LAN: 10Base-T Ethernet or 100Base-TX Fast Ethernet, Auto-MDIX
 - WLAN: IEEE 802.11b/g/n
- Accessing the Camera using Web Browser
 - Platform: Microsoft® Windows® 2000/XP/Vista/Win7
 - CPU: Intel Pentium III 800MHz or above
 - RAM: 512MB
 - Resolution: 800x600 or above
 - User Interface: Microsoft® Internet Explorer 6.0 or above; Apple Safari 2 or above; Mozilla Firefox 2.00 or above; Google Chrome
- Accessing the Camera using UltraView Pro
 - Platform: Microsoft® Windows® XP/Vista/Win7
 - Resolution: 1024x768 or above
- Hardware Requirement:
 - 1~8 cameras: Intel Core 2 Duo 2GB RAM
 - 9~32 cameras: Intel Core 2 Quad 4GB RAM

NOTE If you connect multiple cameras to monitor various places simultaneously, you are recommended to use a computer with higher performance.

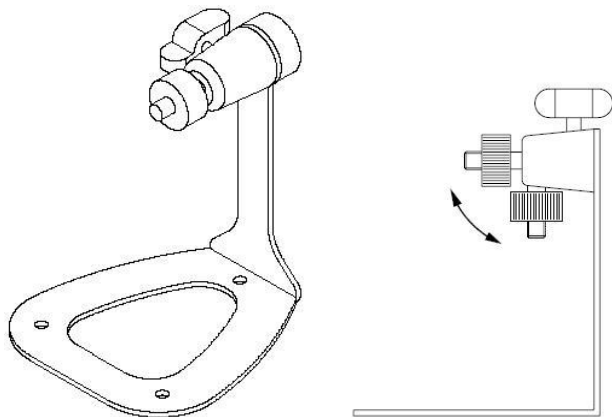
CHAPTER 2

Hardware Installation

2.1 Installing the Camera Stand

The camera comes with a camera stand, which uses a swivel ball screw head to lock to the camera's screw hole. When the camera stand is attached, you can place the camera anywhere by mounting the camera through the three screw holes located in the base of the camera stand.

The Camera Stand



2.2 Connecting the Camera to LAN/WLAN

Use the p your local area network (LAN).
When you connect provided Ethernet cable to connect the camera to the AC power adapter, the camera is powered on automatically. You can verify the power status from the Power LED on the front panel of the camera.
Once connected, the Link LED starts flashing green light and the camera is on standby and ready for use now.



Connecting the Ethernet Cable

When the camera is powered on, the camera will automatically search any access point with “default” SSID.

NOTE

(For wireless model) If the camera cannot to your wireless network, you need to install the camera in LAN and proceed with WLAN settings.

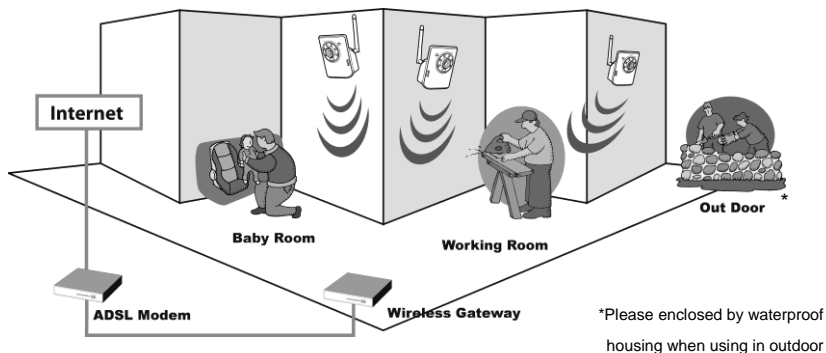
2.3 Applications of the Camera

The camera can be applied in multiple applications, including:

- Monitor local and remote places and objects via Internet or Intranet.
- Capture still images and video clips remotely.
- Upload images or send email messages with the still images attached.

The following diagram explains one of the typical applications for your camera and provides a basic example for installing the camera.

Home Applications



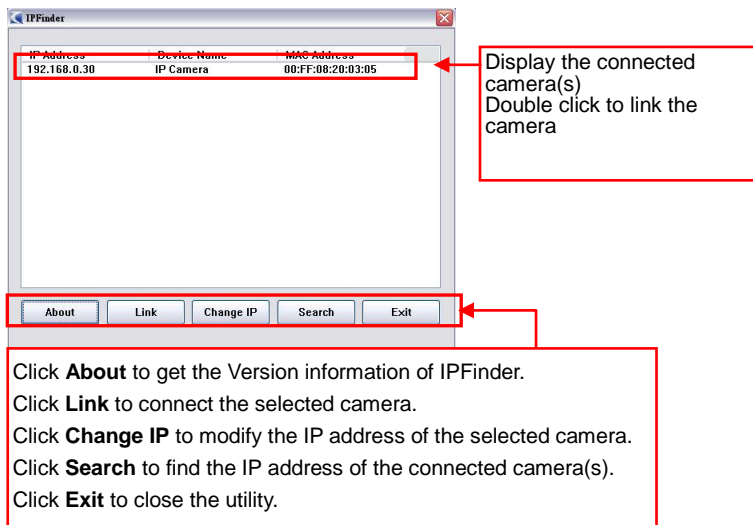
Chapter 3

Software Installation

3.1 IPFinder

The camera comes with a conveniently utility, IPFinder, which is included in the Installation CD-ROM, allowing you to search the camera on your network easily.

1. Insert the Installation CD-ROM into your computer's CD-ROM drive to initiate the Auto-Run program.
2. Click the IPFinder item to launch the utility. The control panel will appear as below.

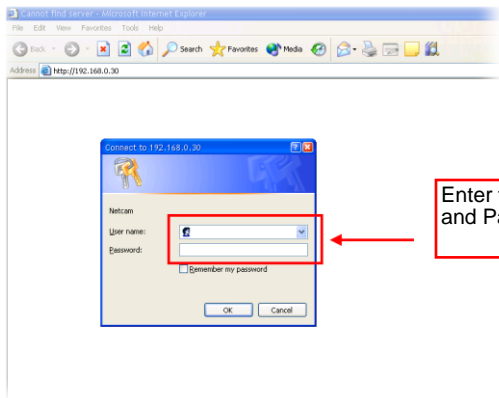


3. Once you get the IP address of the camera, launch the Web browser or UltraView Pro to access your camera.

3.2 Accessing to the Camera

Whenever you want to access the camera:

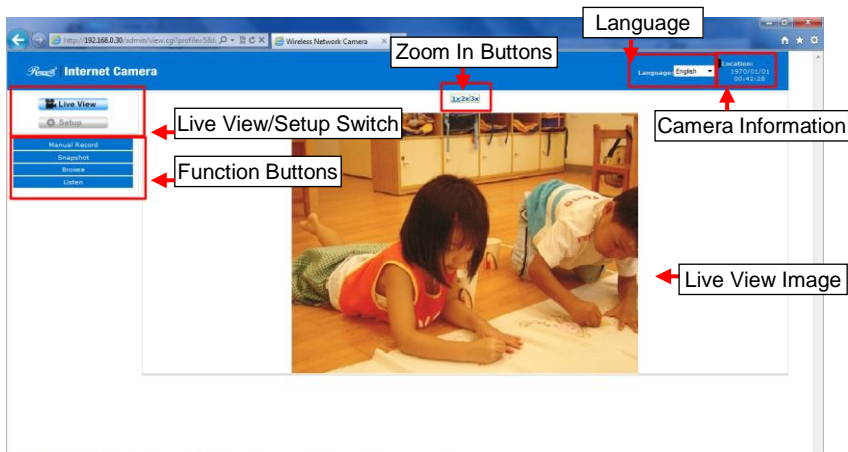
1. Since the default configuration of the camera is DHCP mode enabled, you are recommended to launch IPFinder to search the IP address that is assigned to the camera by the DHCP server, and then click Link to access the camera via the Web browser.
2. If Network Camera can't get IP Address under DHCP mode, the default IP Address will be **192.168.0.30**.
3. When the login window appears, enter the default User name (**admin**) and password (**admin**) and press **OK** to access to the main screen of the camera's Web Configuration.



Enter the User name
and Password.

NOTE If you are initially access to the camera, you will be ask to install a new plug-in for the camera. Permission request depends on the Internet security settings of your computer. Click Yes to proceed.

After you login into the Web Configuration of the camera, the main page will appear as below:



The main page of the Web Configuration provides you with many useful information and functions, including:

- **Camera Information** – Display the camera's location and the current date & time. The information can be modified in the Web Configuration.
- **Language** – Select your favorite displayed language for the system.
- **Live View Image** – Displays the real-time image of the connected camera.
- **Live View/Setup Switch** – Click **Setup** to configure the camera. For details, see Chapter 4 and Click the **Live View** button to return to the Main screen to view the live view image.
- **Function Buttons** – Use these buttons to control the video functions.
 - **Manual Record** allows you to record and save a video clip.
 - **Snapshot** allows you to capture and save a still image.
 - **Browse** allows assign the destination folder to store the video clips and still images.
 - **Listen** allows you to receive the on-site sound and voice from the camera.

- **Zoom In Buttons** – Click the buttons to zoom in the live view image by 1x, 2x, and 3x.

NOTE If your PC use Microsoft Vista platform, you may be unable to find these recorded files what stored by **Snapshot** or **Manual Record**. You need to disable the protected mode of Security in the IE Browser. Please follow as below Steps:

1. Open IE Browser
2. Select **Tools**→ **Internet Options**
3. Select **Security**
4. Disable the “**Enable Protected Mode**” then press **OK**

3.3 Configuring the IP Address of the PC

If you are failed to access to the camera, please check the IP address of your computer. When you connect the camera to your computer directly to proceed with configuration of the camera, you need to set up the IP addresses to be in the same segment for the two devices to communicate.

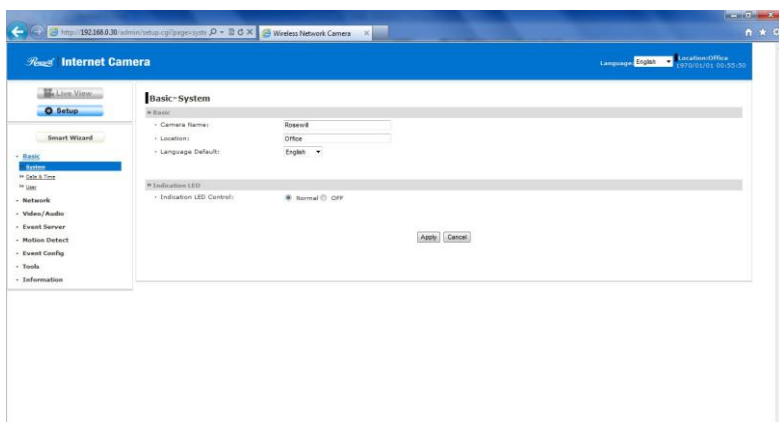
1. On your computer, click **Start > Control Panel** to open the Control Panel window.
2. Double-click **Network Connection** to open the Network Connection window.
3. Right-click **Local Area Connection** and then click **Properties** from the shortcut menu.
4. When the Local Area Connection Properties window appears, select the **General** tab.
5. Select **Internet Protocol [TCP/IP]** and then click **Properties** to bring up the Internet Protocol [TCP/IP] Properties window.
6. To configure a fixed IP address that is within the segment of the camera, select the **Use the following IP address** option. Then, enter an IP address into the empty field. The suggested IP address is **192.168.0.x** (x is 1~254 except 30), and the suggested Subnet mask is **255.255.255.0**.
7. When you are finished, click **OK**.

Chapter 4

Configuring the Camera

4.1 Web Configuration

You can access and manage the camera through the Web browser and the provided software application UltraView Pro. This chapter describes the Web Configuration, and guides you through the configuration of the camera by using the web browser. To configure the camera, click **Setup** on the main page of Web Configuration. The Web Configuration will start from the **Basic** page.



The Web Configuration contains the settings that are required for the camera in the left menu bar, including **Smart Wizard**, **Basic**, **Network**, **Video**, **Event Server**, **Motion detect**, **Event Configuration**, **Tools**, and **Information**.

4.2 Smart Wizard

The camera's Smart Wizard lets you configure your camera easily and quickly. The wizard will guide you through the necessary settings with detailed instructions on each step.

To start the wizard, click **Smart Wizard** in the left menu bar.

Step 1. Camera Settings

Camera Settings

• Camera Name:

wireless network camera 1

• Location:

classroom 1

• Admin Password:

•••••

• Confirm Password:

•••••

Next >

Cancel

Enter the name for the camera and place.

Enter the administrator password.

Step 2. IP Settings

IP Settings

☒ DHCP

☐ Static IP

• IP

192.168.0.80

• Subnet Mask

255.255.255.0

• Default Gateway

192.168.0.1

• Primary DNS

• Secondary DNS

☐ PPPoE

• User Name

• Password

< Prev

Next >

Cancel

Select the IP setting according to your network:
DHCP, Static IP, or PPPoE.

Step 3. Email Settings

Email Setting

- SMTP Server Address:
- Sender Email Address:
- SMTP Port:
☐ This server requires an encrypted connection (SSL)
- ☐ STARTTLS
- Authentication Mode: ☒ None ☐ SMTP
- Sender User Name:
- Sender Password:
- Receiver #1 Email Address:
- Receiver #2 Email Address:

< Prev

Next >

Cancel

Enter the required information to be able to send email with image.

Step 4. Wireless Networking (for wireless model)

Wireless Networking

- Network ID(SSID):

Site Survey
- Wireless Mode: ☒ Infrastructure ☐ Ad-Hoc
- Channel:
- Authentication:
- Encryption: ☒ None ☐ WEP
- Format: ☒ ASCII ☐ HEX
- Key Length: ☒ 64 bits ☐ 128 bits
- ☒ WEP Key 1:
- ☐ WEP Key 2:
- ☐ WEP Key 3:
- ☐ WEP Key 4:

< Prev

Next >

Cancel

Complete the required settings for wireless networking.

Step 5. Confirm Settings

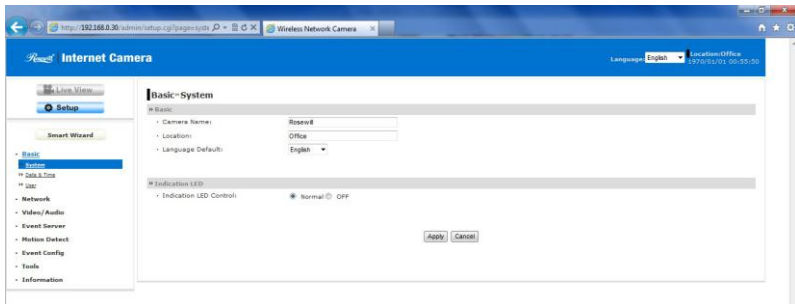
Confirm Settings

• Camera Name:	
• Location:	
• IP Mode:	DHCP
• IPv4 Address:	192.168.0.30
• Subnet Mask:	255.255.255.0
• Default Gateway:	192.168.0.1
• Primary DNS:	
• Secondary DNS:	
• SMTP Server Address:	mail.com
• SMTP Port:	25
• SSL:	Disable
• STARTTLS:	Disable
• Sender Email Address:	mymail@mail.com
• Authentication Mode:	None
• Sender User Name:	
• Receiver #1 Email Address:	
• Receiver #2 Email Address:	
• ESSID:	default
• Connection:	Infrastructure
• Channel:	6
• Authentication:	Open
• Encryption:	None

This step shows the configuration of your camera. When you confirm the settings, click **Apply** to finish the wizard and reboot the camera. Otherwise, click **Prev** to go back to the previous step(s) and change the settings; or click **Cancel** to end the wizard and discard the changes.

4.3 Basic Setup

The Basic menu contains three sub-menus that provide the system settings for the camera, such as the Camera Name, Location, Date & Time, and User management.



Basic >> System

■ Basic

- **Camera Name:** Enter a descriptive name for the camera.
- **Location:** Enter a descriptive name for the location used by the camera.

■ Indication LED

This item allows you to set the LED illumination as desired. There are two options:
Normal and **OFF**.

Basic >> Date & Time

■ Date & Time

- **Time Zone:** Select the proper time zone for the region from the pull-down menu.
- **Synchronize with PC:** Select this option and the date & time settings of the camera will be synchronized with the connected computer.
- **Synchronize with NTP Server:** Select this option and the time will be synchronized with the NTP Server. You need to enter the IP address of the server and select the update interval in the following two boxes.
- **Manual:** Select this option to set the date and time manually.

The screenshot shows a web browser window with the address bar displaying `http://192.168.0.30/admin/setup.cgi?page=date`. The page title is "Internet Camera". On the left sidebar, there are buttons for "Live View", "Setup", and "Smart Wizard", and a menu with options: Basic, System, Date & Time (selected), User, Network, Video/Audio, Event Server, Motion Detect, Event Config, Tools, and Information. The main content area is titled "Basic Date & Time" and contains the following settings:

- TimeZone: (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London (dropdown menu)
- ☐ Automatically adjust clock for daylight saving time changes
- ☐ Synchronize with PC
- ☒ Synchronize with NTP Server
 - NTP Server Address:
 - Update Interval: hours
- ☐ Manual
 - Date: (YYYY/MM/DD)
 - Time: (hh:mm:ss)

At the bottom right of the configuration area are "Apply" and "Cancel" buttons.

Basic >> User

■ Administrator

To prevent unauthorized access to the camera's Web Configuration, you are strongly recommend to change the default administrator password. Type the administrator password twice to set and confirm the password.

■ General User

- **User Name:** Enter the user's name you want to add to use the camera.
- **Password:** Enter the password for the new user.

When you are finished, click **Add/Modify** to add the new user to the camera. To modify the user's information, select the one you want to modify from **UserList** and click **Add/Modify**.

- **UserList:** Display the existing users of the camera. To delete a user, select the one you want to delete and click **Delete**.

■ Guest

- **User Name:** Enter the guest's name you want to add to use the camera.
- **Password:** Enter the password for the new guest.

- **UserList:** Display the existing guests of the camera. To delete a user, select the one you want to delete and click **Delete**.

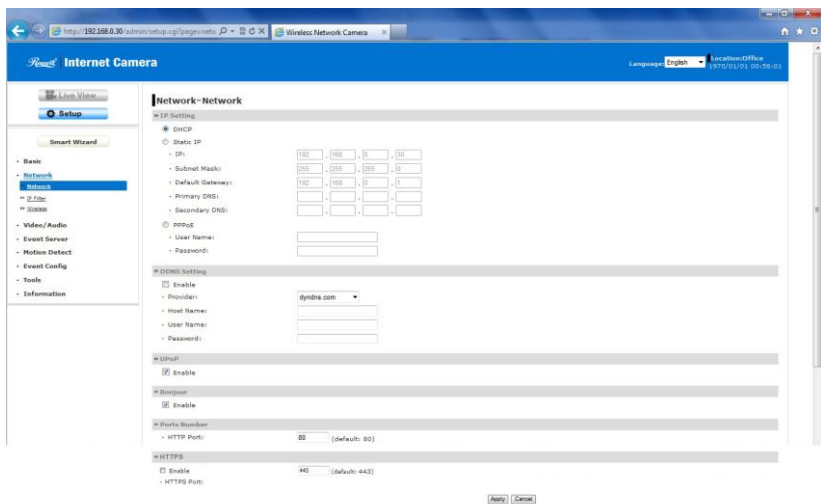
NOTE The “General User” can access the camera and control the Function buttons of the camera’s Web Configuration; the “Guest” can only view the live view image from the main page of the Web Configuration while accessing the camera. Only the “Administrator” is allowed to configure the camera through the Web Configuration.

The screenshot shows a web browser window with the address bar displaying `http://192.168.0.30/admin/setup.cgi?page=user`. The page title is "Internet Camera". On the left sidebar, there are buttons for "Live View", "Setup", and "Smart Wizard". Below these are navigation links: "Basic" (selected), "System", "Date & Time", "User", "Network", "Video/Audio", "Event Server", "Motion Detect", "Event Config", "Tools", and "Information". The main content area is titled "Basic User" and contains three sections: "Administrator", "General User", and "Guest". Each section has input fields for "Password", "Confirm Password", "User Name", and "UserList", along with "Add/Modify" and "Delete" buttons.

Basic User	
Administrator	
• Password:	<input type="text"/>
• Confirm Password:	<input type="text"/>
<input type="button" value="Modify"/>	
General User	
• User Name:	<input type="text"/>
• Password:	<input type="text"/>
• UserList:	<input type="text"/>
<input type="button" value="Add/Modify"/>	
<input type="button" value="Delete"/>	
Guest	
• User Name:	<input type="text"/>
• Password:	<input type="text"/>
• UserList:	<input type="text"/>
<input type="button" value="Add/Modify"/>	
<input type="button" value="Delete"/>	

4.4 Network Settings

The Network menu contains three sub-menus that provide the network settings for the camera, such as the IP Setting, DDNS Setting, IP Filter, and Wireless (for wireless model).



Network >> Network

■ IP Setting

This item allows you to select the IP address mode and set up the related configuration.

- **DHCP:** Select this option when your network uses the DHCP server. When the camera starts up, it will be assigned an IP address from the DHCP server automatically.
- **Static IP:** Select this option to assign the IP address for the camera directly. You can use IPFinder to obtain the related setting values.

IP	Enter the IP address of the camera. The default setting is 192.168.0.30 .
Subnet Mask	Enter the Subnet Mask of the camera. The default setting is 255.255.255.0 .
Default Gateway	Enter the Default Gateway of the camera. The default setting is 192.168.0.1 .
Primary/ Secondary DNS	DNS (Domain Name System) translates domain names into IP addresses. Enter the Primary DNS and Secondary DNS that are provided by ISP.

- **PPPoE:** Select this option when you use a direct connection via the ADSL modem. You should have a PPPoE account from your Internet service provider. Enter the **User Name** and **Password**. The camera will get an IP address from the ISP as starting up.

NOTE Once the camera get an IP address from the ISP as starting up, it automatically sends a notification email to you. Therefore, when you select PPPoE as your connecting type, you have to set up the email or DDNS configuration in advance.

■ DDNS Setting

With the Dynamic DNS feature, you can assign a fixed host and domain name to a dynamic Internet IP address. Select the **Enable** option to enable this feature. Then, select the Provider from the pull-down list and enter the required information in the **Host Name**, **User Name**, and **Password** boxes. Please note that you have to sign up for DDNS service with the service provider first.

■ UPnP

The camera supports UPnP (Universal Plug and Play), which is a set of computer network protocols that enable the device-to-device interoperability. In addition, it supports port auto mapping function so that you can access the camera if it is behind an NAT router or firewall. Select the **Enable** option to enable this feature.

■ Ports Number

- **HTTP Port:** The default HTTP port is **80**.

NOTE If the camera is behind an NAT router or firewall, the suggested to be used is from 1024 to 65535.

- **HTTPS**

- **Enable:** Select this option to enable HTTPS, which is a secure protocol to provide authenticated and encrypted communication within your network.
- **HTTPS Port:** Assign a HTTPS port in the text box. The default HTTPS port is **443**.

Network >> IP Filter

The IP Filter setting allows the administrator of the camera to limit the users within a certain range of IP addresses to access the camera. To disable this feature, select the **Disable** option; otherwise, select the **Accept** option to assign the range of IP addresses that are allowed to access the camera, or select the **Deny** option to assign the range of IP addresses that are blocked to access the camera.

- **Disable:** Select this option to disable the IP Filter function of the camera.
- **Accept**
 - **IPv4:** Assign a range of IP addresses that are allowed to access the camera by entering the **Start IP address** and **End IP address** options. When you are finished, click **Add** to save the range setting. You can repeat the action to assign multiple ranges for the camera.
 - **IPv6:** Enter the **IP Address** that is allowed to access the camera.
- **Deny**
 - **IPv4:** Assign a range of IP addresses that are blocked to access the camera by entering the **Start IP address** and **End IP address** options. When you are finished, click **Add** to save the range setting. You can repeat the action to assign multiple ranges for the camera.
 - **IPv6:** Enter the **IP Address** that is not allowed to access the camera.

For example, when you enter **192.168.0.50/192.168.0.80** in **Start/End IP Address of Accept > IPv4**, the user whose IP address located within **192.168.0.50 ~ 192.168.0.80** will be allowed to access the camera. On the other hand, if you enter the IP range in **Start/End IP Address of Deny > IPv4**, the user whose IP address located within the range will not be allowed to access the camera.

Network >> Wireless Setting (for wireless model)

The camera supports WLAN while you use the wireless network. Select the **Enable** option to enable this feature.

■ Wireless

- **Network ID (SSID):** Keep the default setting of this option to connect the camera to any access point under the infrastructure network mode. To connect the camera to a specified access point, set a SSID for the camera to correspond with the access point's ESS-ID. To connect the camera to an Ad-Hoc wireless workgroup, set the same wireless channel and SSID to match with the computer's configuration.

Click **Site Survey** to display the available wireless networks, so that you can easily connect to one of the listed wireless networks.

Network > Wireless Setting

Wireless

☒ Enable

Network ID(SSID):

corega

Site Survey

ESSID	Mac	Channel	Mode	Privacy	Signal
jasmine&us	00:0a:7f:aa:a3:7f	2	Infrastructure	Yes	0%
Jasmine	00:18:f3:64:4d:61	2	Infrastructure	Yes	0%
n-RDAP1	00:11:95:64:3b:7f	6	Infrastructure	Yes	0%
DI-724P	00:50:18:38:41:aa	6	Infrastructure	Yes	0%
asus-w520g	00:18:f3:64:4d:27	10	Infrastructure	No	60%
fin-A2886F	00:0a:7f:83:7a:7e	11	Infrastructure	No	100%
allen	00:19:cb:0a:b0:61	11	Infrastructure	No	100%

List of searching results

- **Wireless Mode:** Select the type of wireless communication for the camera: **Infrastructure** or **Ad-Hoc**.
- **Channel:** Select the appropriate channel from the list.
- **Authentication:** Select the authentication method to secure the camera from being used by unauthorized user: **Open**, **Shared-key**, **WPA-PSK**, and **WPA2-PSK**. The following table explains the four options:

Open	The default setting of Authentication mode, which communicates the key across the network.
Shared-key	Allow communication only with other devices with identical WEP settings.
WPA-PSK/ WPA2-PSK	WPA-PSK/WPA2-PSK is specially designed for the users who do not have access to network authentication servers. The user has to manually enter the starting password in their access point or gateway, as well as in each PC on the wireless network.

If you select **Open** or **Shared-key** as the Authentication mode, you need to complete the following settings:

Encryption: Select the **WEP** option to enable the data encryption feature to secure the camera within the wireless network.

Format: Once you enable the Encryption feature, you need to determine the encryption format by selecting **ASCII** or **HEX**. ASCII format causes each character you type to be interpreted as an eight-bit value. Hex format causes each pair of characters you type to be interpreted as an eight-bit value in hexadecimal (base 16) notation.

Key Length: Select the WEP key length you use: **64 bits** or **128 bits**.

WEP Key 1/2/3/4: Enter the WEP key(s) in the following boxes.

If you select **WPA-PSK** or **WPA2-PSK** as the Authentication mode, you need to complete the following settings:

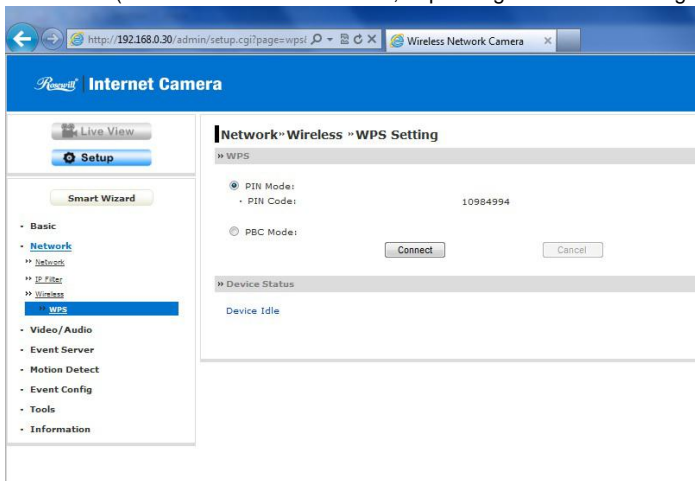
Encryption: Select **TKIP** or **AES**. TKIP (Temporal Key Integrity Protocol) changes the temporal key every 10,000 packets to insure much greater security than the standard WEP security. AES (Advanced Encryption Standard) is used to ensure the highest degree of security and authenticity for digital information.

Pre-Shared Key: This is used to identify each other in the network. Enter the name in the box, and this name must match the Pre-shared key value in the remote device.

Network >> Wireless >> WPS Setting (for wireless model)

WPS (Wi-Fi Protected Setup) sets a new standard of Wi-Fi security, providing a simplified secure network setup solution for the end users. WPS can be enabled by the following two options:

1. PIN Mode
2. PBC Mode (or WPS button on the device, depending on hardware design)



■ PROTECTED SETUP

Press the **Reset to Unconfigured** button to reset the WPS configuration of the camera.

■ WPS

- **PIN Mode:** The PIN (Personal Information Number) mode builds the connection by entering the PIN Code directly.
 - a. Click the **PIN Mode** option.
 - b. Click **Site Survey** button to select the router (or access point) you want to connect.
 - c. Click the **Connect** button to start WPS function of the camera.
 - d. You need to enter the PIN Code displayed on the camera to the router (or access point) within **120 seconds** to complete the setup.

- **PBC Mode:** The PBC (Push-Button-Configuration) mode builds the connection by simply pressing a button on the device.

- a. Click the **PBC Mode** option.
- b. Click the **Connect** button to start WPS function of the camera.

TIP Instead of clicking the **Connect** button of Configuration Utility, you can press the WPS button if the camera is designed with a hardware button of WPS function.

- c. You need to press the WPS button on the router (or access point) within **120 seconds** to complete the setup.

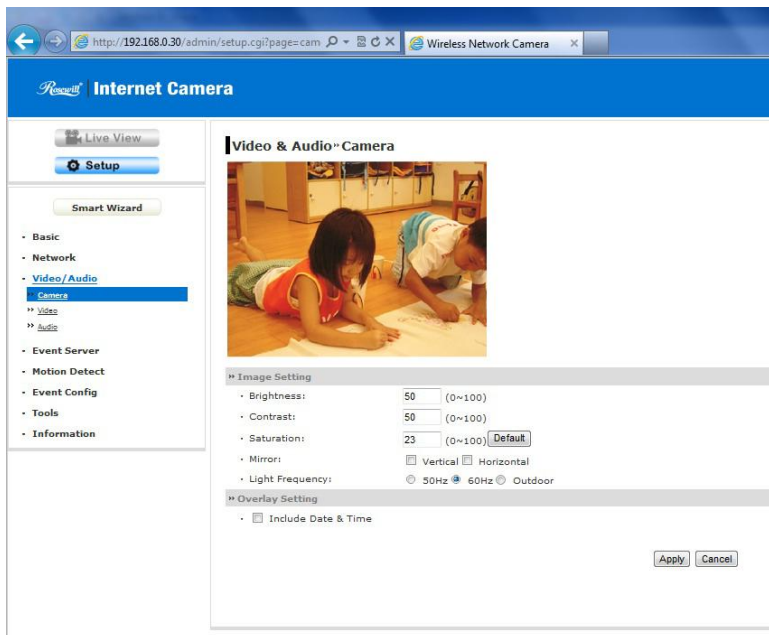
■ **Device Status**

Display the WPS configuration of the camera.

- TIP** The Power LED indicates the WPS connection status by:
- blinking 3 times when the connection is built successfully.
 - repeating 3 times of short-short-long blink when the connection is failed.

4.5 Setting up Video & Audio

The Video & Audio menu contains four sub-menus that provide the video and audio settings for the camera.



Video & Audio >> Camera

■ Image Setting

- **Brightness:** Adjust the brightness level from 0 ~ 100.
- **Contrast:** Adjust the contrast level from 0 ~ 100.
- **Saturation:** Adjust the colors level from 0 ~ 100.

TIP Click **Default** then **Apply** to restore the default settings of the three options above.

- **Mirror:** Select the **Horizontal** option to mirror the image horizontally. Select the **Vertical** option to mirror the image vertically.
- **Light Frequency:** Select the proper frequency according to the camera's location: **50Hz** or **60Hz**.

Video & Audio >> Video

■ MJPEG

- **Video Resolution:** Select the desired video resolution from the three formats: **VGA, QVGA** and **QQVGA**. The higher setting (VGA) obtains better video quality while it uses more resource within your network.
- **Video Quality:** Select the desired image quality from five levels: **Lowest, Low, Normal, High,** and **Highest**.
- **Frame Rate:** Select a proper setting depending on your network status. The available setting value includes: 5, 10, 15, 20, or 25.

Video & Audio >> Audio

■ Camera Microphone In:

- **Enable:** Select the **Enable** option to enable the camera's audio function, so that you can receive the on-site sound and voice from the camera.

4.6 Event Server Configuration

The Event Server menu contains two sub-menus that allow you to upload images to FTP, and send emails that include still images.

When you complete the required settings for FTP, or Email, click **Test** to test the related configuration is correct or not. Once the camera connects to the server successfully, click **Apply**.

Event Server Setting>> FTP

■ FTP

- **Host Address:** Enter the IP address of the target FTP server.
- **Port Number:** Enter the port number used for the FTP server.
- **User Name:** Enter the user name to login into the FTP server.
- **Password:** Enter the password to login into the FTP server.
- **Directory Path:** Enter the destination folder for uploading the images. For example, **/Test/**.
- **Passive Mode:** Select the **Enable** option to enable passive mode.

The screenshot shows a web browser window with the address bar displaying `http://192.168.0.30/admin/setup.cgi?page=ftp&`. The page title is "Internet Camera". On the left sidebar, there are buttons for "Live View", "Setup", and "Smart Wizard". Below these are a list of menu items: "Basic", "Network", "Video/Audio", "Event Server" (which is expanded to show "FTP" and "Email"), "Motion Detect", "Event Config", "Tools", and "Information". The main content area is titled "Event Server Setting-FTP". It contains the following fields and options:

- Host Address:
- Port Number:
- User Name:
- Password:
- Directory Path:
- Passive Mode: ☒ Enable

At the bottom right of the configuration area are three buttons: "Test", "Apply", and "Cancel".

Event Server Setting >> Email

■ Email

- **SMTP Server Address:** Enter the mail server address. For example, mymail.com.
- **Sender Email Address:** Enter the email address of the user who will send the email. For example, John@mymail.com.
- **SMTP Port:** Assign the SMTP port in the text box. The default SMTP port is **25**. If the mail server requires an encrypted connection, you should check the **SSL** option. **STARTTLS** is an extension to plain text communication protocols. It offers a way to upgrade a plain text connection to an encrypted (TLS or SSL) connection instead of using a separate port for encrypted communication.
- **Authentication Mode:** Select **None** or **SMTP** according to the mail server configuration.
- **Sender User Name:** Enter the user name to login the mail server.
- **Sender Password:** Enter the password to login the mail server.
- **Receiver #1 Email Address:** Enter the first email address of the user who will receive the email.
- **Receiver #2 Email Address:** Enter the second email address of the user who will receive the email.
- **WAN IP Change Notification:** Select the option to enable the system to notify you when the WAN IP address changed.

The screenshot shows a web browser window with the address bar displaying `http://192.168.0.30/admin/setup.cgi?page=ema`. The page title is "Internet Camera". On the left sidebar, there are buttons for "Live View", "Setup", and "Smart Wizard". Below these are a list of menu items: "Basic", "Network", "Video/Audio", "Event Server" (highlighted), "Email" (highlighted), "Motion Detect", "Event Config", "Tools", and "Information". The main content area is titled "Event Server Setting - Email". It contains the following fields and options:

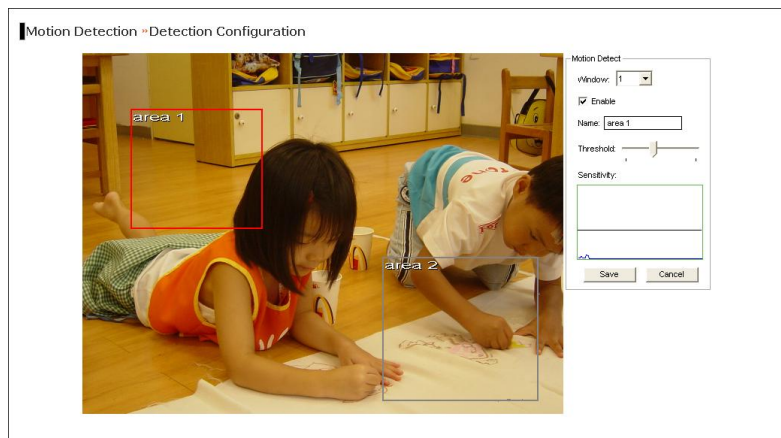
- SMTP Server Address:
- Sender Email Address:
- SMTP Port:
- ☐ This server requires an encrypted connection (SSL)
- ☐ STARTTLS
- Authentication Mode: ☒ None ☐ SMTP
- Sender User Name:
- Sender Password:
- Receiver #1 Email Address:
- Receiver #2 Email Address:
- ☐ Wan IP Change Notify

At the bottom right, there are three buttons: "Test", "Apply", and "Cancel".

4.7 Motion Detect

The Motion Detect menu contains the command and option that allow you to enable and set up the motion detection feature of the camera. The camera provides two detecting areas.

To enable the detecting area, select **Window 1** or **2** from the pull-down list, and then select **Enable**. When the detecting area is enabled, you can use the mouse to move the detecting area and change the area coverage.



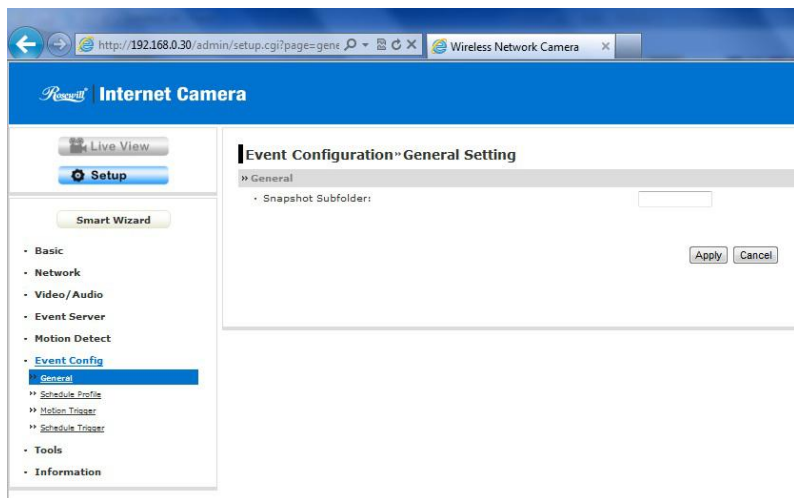
- **Name:** Assign a name to the detecting area.
- **Threshold:** Move the slide bar to adjust the level for detecting motion to record video.

4.8 Event Configuration

The Event Configuration menu contains four sub-menus that provide the commands to configure event profiles.

Event Configuration >> General Setting

- **Snapshot/Recording Subfolder:** You can assign a given sub-folder for captured file. Otherwise, leave this option blank to use the default setting.



Event Configuration >> Arrange Schedule Profile

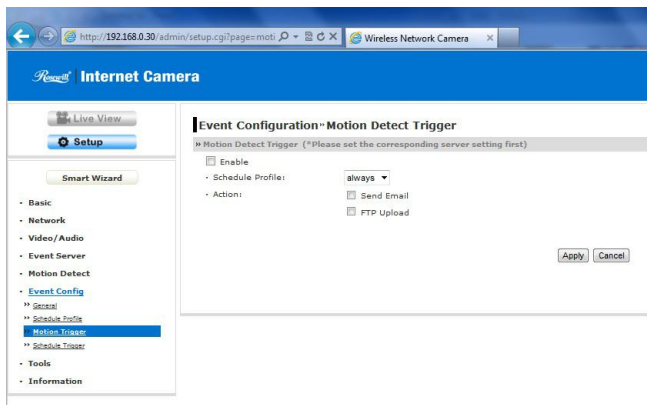
This sub-menu displays the scheduled profile(s). To customize the profile, click **Add** and then enter a descriptive name for the profile in the prompt dialog window. After entering the profile name, click **OK** and the profile is added to the Schedule Profiles list. To delete the profile, select the profile in the list and click **Delete**.

- **Profile Name:** Display the profile name that you select in the Schedule Profiles list.
- **Weekdays:** Select the weekday(s) that you want to separately assign in the schedule profile. The weekday that has been assigned will be displayed with green color.
- **Time List:** Display the time period that you have assigned within the selected weekday. To assign the same time period to every weekday, click **Add this to all weekdays**; click **Delete this from all weekdays** to remove the selected time period from every weekday. Click Delete to remove the selected time period.
- **Start/End Time:** Enter the start and end time and then click **Add** to assign a time period within in the selected weekday.

Event Configuration >> Motion Detect Trigger

Select the **Enable** option to enable the trigger function of the camera, so that you can send captured images within the detecting area to the FTP server, or email receiver. You have to configure corresponding settings, such as FTP server and email server, to enable this feature.

- **Schedule Profile:** Select a schedule profile from the pull-down list.
- **Action:** Select the destination that the captured images will be sent to: **Send Email**, or **FTP Upload**.



Event Configuration >> Schedule Trigger

You can separately configure the schedule for trigger function of the camera by **Email**, or **FTP**. Select the **Enable** option on each item, and then select a **Schedule Profile** from the pull-down list and set the **Interval** time.

The screenshot shows a web browser window with the address bar displaying `http://192.168.0.30/admin/setup.cgi?page=sche`. The browser tab is titled "Wireless Network Camera". The page header is "Internet Camera". On the left sidebar, there are buttons for "Live View", "Setup", and "Smart Wizard". Below these are navigation links: "Basic", "Network", "Video/Audio", "Event Server", "Motion Detect", "Event Config" (selected), "General", "Schedule Profile", "Motion Trigger", "Schedule Trigger" (highlighted in blue), "Tools", and "Information". The main content area is titled "Event Configuration - Schedule Trigger". It contains two sections: "Email Schedule" and "FTP Schedule". Each section has an "Enable" checkbox, a "Schedule Profile" dropdown menu (both set to "always"), and an "Interval" input field (set to 20 for Email and 30 for FTP) followed by "sec(s)". At the bottom right of the main content area are "Apply" and "Cancel" buttons.

Internet Camera

Live View
Setup
Smart Wizard

- Basic
- Network
- Video/Audio
- Event Server
- Motion Detect
- Event Config
 - General
 - Schedule Profile
 - Motion Trigger
 - Schedule Trigger**
- Tools
- Information

Event Configuration - Schedule Trigger

Email Schedule

☐ Enable

Schedule Profile: always

Interval: 20 sec(s)

FTP Schedule

☐ Enable

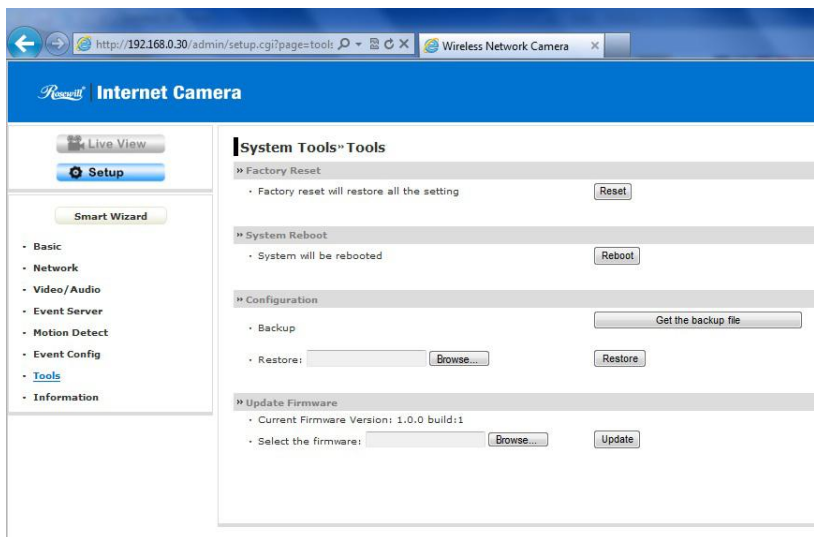
Schedule Profile: always

Interval: 30 sec(s)

Apply Cancel

4.9 Tools

The Tools menu provides the commands that allow you to restart or reset the camera. You can also backup and restore your configuration, and upgrade the firmware for the camera.



■ Factory Reset

Click **Reset** to restore all factory default settings for the camera.

■ System Reboot

Click **Reboot** to restart the camera just like turning the device off and on. The camera configuration will be retained after rebooting.

■ Configuration

You can save your camera configuration as a backup file on your computer. Whenever you want to resume the original settings, you can restore them by retrieving the backup file.

- **Backup:** Click **Get the backup file** to save the current configuration of the camera.
- **Restore:** Click **Browse** to locate the backup file and then click **Restore**.

■ **Update Firmware**

This item displays the current firmware version. You can upgrade the firmware for your camera once you obtained a latest version of firmware.

- **Select the firmware:** Click **Browse** to locate the backup file and then click **Update**.

NOTE Make sure to keep the camera connected to the power source during the process of upgrading firmware. Otherwise, the camera might be damaged because of failure of upgrading firmware.

4.10 Information

The Information menu displays the current configuration and events log of the camera.

The screenshot shows the web interface of a Rosewill Internet Camera. The browser address bar displays `http://192.168.0.30/admin/setup.cgi?page=device`. The page title is "Internet Camera". On the left sidebar, there are buttons for "Live View", "Setup", and "Smart Wizard". Below these are navigation links: "Basic", "Network", "Video/Audio", "Event Server", "Motion Detect", "Event Config", "Tools", "Information" (which is expanded to show "Device Info" and "System Log"). The main content area is titled "System Information - Device Information". It contains four expandable sections: "Basic", "Video & Audio", "Network", and "Wireless".

System Information - Device Information	
Basic	
Camera Name:	Rosewill
Location:	Office
Firmware Version:	1.0.0 build: 1
Video & Audio	
MJPEG Resolution:	VGA
Microphone In:	Enable
Network	
IP Mode:	DHCP
IPv4 Address:	192.168.0.30
IPv4 Subnet Mask:	255.255.255.0
IPv4 Gateway:	192.168.0.1
Primary DNS Address:	
Secondary DNS address:	
IPv6 Address:	fe80::21a:97ff:fe01:80c3
IPv6 Gateway:	N/A
MAC Address:	00:1a:97:01:80:c3
UPnP Enable:	Enable
Bonjour:	Enable
HTTP Port:	80
Wan IP:	0.0.0.0
Wireless	
ESSID:	default
Connection:	Infrastructure
Channel:	Not Connected
Authentication:	Open
Encryption:	None

■ Device Info

Display the Basic, Video, Network, and Wireless settings (for wireless model) of the camera.

■ System Log

The Logs table displays the events log recorded by the system.

CHAPTER 5

Software Application - UltraView Pro

5.1 Introduction

This Software User Guide provides detailed instructions on operating UltraView Pro, a customized software application with a user-friendly interface allowing you to access and control your camera(s). You can connect up to 32 cameras to monitor different places and record events for each camera. With UltraView Pro, you can also change some basic settings of the camera, such as schedule profiles and motion detecting. In addition, if your camera supports advanced features, such as audio or pan/tilt function, you can use these functions through the control panels of UltraView Pro.

To use UltraView Pro, you have to install it in your computer. It is recommended to use a high performance computer if you want to connect multiple cameras simultaneously.

Platform: Microsoft® Windows® XP/Vista*, and Windows 7

Hard Disk: 80GB or above

Resolution: 1024x768 or above

Hardware Requirement

1~8 cameras: Intel Core 2 Duo; 2GB RAM

9~32 cameras: Intel Core 2 Quad; 4GB RAM

* For Windows Vista users: please go to User Accounts and Family Safety > User Accounts > Turn User Account Control on or off, then uncheck the "Use User Account Control (UAC) to help protect your computer checkbox. Restart your computer to validate the setting. For additional information of User Account Control, please go to <http://www.microsoft.com/windows/products/windowsvista/features/details/useraccountcontrol.msp>

5.2 Installation

IMPORTANT! Before installing the program, make sure that the Avira AntiVir (the anti-virus application) is not installed in your computer system. Otherwise, UltraView Pro might be malfunctioned while operating in your system.

1. Insert the Installation CD-ROM into the CD drive of your computer to initiate the Auto-Run program.

The Auto-Run screen provides the following buttons:

- Quick Guide
- Advanced Guide
- Software Manual
- IPFinder
- Install Software
- Browse
- Exit

2. Click **Install Software**, and the setup wizard appears to help you complete the installation step-by-step.

NOTE To use UltraView Pro, you must have Microsoft .NET Framework 2.0 installed in the computer. The setup wizard will detect it and, if the program is not installed yet, ask you to install it during the process of installing UltraView Pro.

Microsoft Windows Installer 3.0 or above is a required component to install UltraView Pro. For more information of the required component during installation, please visit the Microsoft support Website.

3. Click **Install**. The Install Shield Wizard starts to install UltraView Pro to your computer.

The Status bar indicates the installation process.

4. When done, click **Finish** to complete the installation.

You will see the program icon appeared on the desktop of your computer.



UltraView Pro

TIP The IPFinder program will be installed in your computer simultaneously when you install UltraView Pro.



IPFinder

For more information of using IPFinder, refer to Chapter 5 or the User Guide provided by your camera.

5.3 Using UltraView Pro

5.3.1 Starting the Program

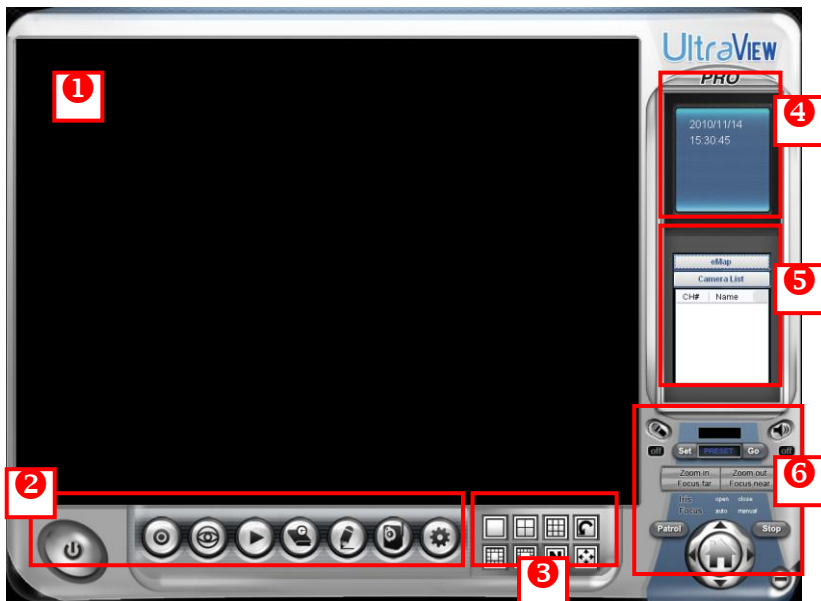
1. Click **Start → Programs → UltraView Pro → UltraView Pro**.
Alternatively, you can start the program by double-clicking the program icon on the desktop of your computer.
2. On the login window, enter the **User name/Password** and click **OK** to login.
If this is the first time you start the program and login, use the default **User name / Password: *admin / admin***.



NOTE For security purpose, you are highly recommended to change the default user name and password after login. For more information, see the *Configuring the System > User Management* section.

5.3.2 Main Window and Item Feature









When you start and login to UltraView Pro, the Main window will display as below:








The Main window provides you with the information on operating the system, as well as the control panel such as the Quick Launch buttons, and so on.





NOTE UltraView Pro requires the resolution setting up to 1024 x 768. For best view of the application, you are recommended to configure the resolution setting to 1024 x 768 or higher; otherwise, it cannot be displayed on the screen when launching the program.

- ❶ **Live View Window** displays the live video of the connected camera(s).
- ❷ **Quick Launch Buttons** are located below the Live View Window, providing you with the following quick-launch functions:



Button	Function
	Click to select Logout or Close UltraView Pro.
	Click to select Restore Recording Type , All Continuous Recording , or Stop All Recording .
	Click and then select to display the View Setting window, switch to the eMap View window, or check the Camera Status .
	Click to display the Playback window.
	Click to display the Schedule Configuration window.
	Click to configure the event settings: Event Server , Address Book , and Event Trigger .
	Click to configure Device Setting and Recording Setting .
	Click to set the Account , Language , and System Setting ; or view the Version or the program.




- ❸ **Camera View Mode** buttons in this area allow you to switch the camera view mode.

Button	Function
	Display the connected camera(s) in single camera view mode.
	Display the connected camera(s) in quad view mode.
	Display the connected camera(s) in 3 x 3 grid view mode.
	Display the connected camera(s) in 13-camera view mode using a split window. The first camera is displayed as the major view.
	Display the connected camera(s) in 17-camera view mode using a split window. The first camera is displayed as the major view.

	Display the connected camera(s) in N x N grid view mode, supporting up to 32 cameras.
	Display the live view of the selected camera in full screen mode. Press the ESC key on the PC keyboard to resume the Main window.
	<p>Automatically switch the live view of each connected cameras in single camera view mode by 30 seconds*. Click once to start and click again to stop.</p> <p>* The auto-switch time is set as 30 seconds by default, which can be changed by clicking the  → System Setting and then change the value from the pull-down list of the Auto Switch time interval option.</p>

- ④ **System Information** displays the system information, including the date and time, and the available storage space of the system.
- ⑤ **Live View Status** provides the status of live view mode, including **Camera List** and **eMap**.
- **Camera List** displays the status of the connected cameras. If multiple cameras are connected, you can switch to the live view of each camera by simply selecting the camera from the list.
 - **eMap** allows you to select the desired camera to the view from the map easily. Please note that you have to set up the eMap for monitoring in advance.
- ⑥ **Camera Control Buttons** provides the control buttons that allow you to control the selected camera.

Button	Function
	Talk On/Off. Click to enable/disable the speaker function of the connected camera. This option is available only in single camera view mode.
	Listen On/Off. Click to enable/disable the microphone

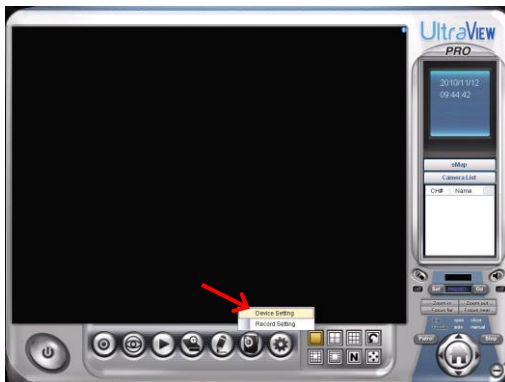
	function of the connected camera. This option is available only in single camera view mode.
	<p>If the connected camera features pan/tilt functions, you can use this control panel to set the preset positions (up to 8 positions). Once configured, you can move the camera lens to the desired position quickly.</p> <p>To set the preset positions, adjust the camera lens to the desired position using the Navigation buttons, and then select the position number (1~8) from the Set button.</p> <p>To move to the preset position, simply select the position number (1~8) from the Go button.</p>
	<p>Navigation Buttons (Left/Right/Up/Down/Home). If the connected camera features pan/tilt functions, the Navigation buttons allow you to move the camera lens position. Clicking the Home (center) button will move the camera lens to the assigned home position.</p>
	<p>The Patrol/Stop buttons are used to enable/disable the swinging function of the camera. Click Patrol to start patrolling through the preset positions once. Click Stop to stop patrolling.</p>

5.3.3 Accessing the Camera

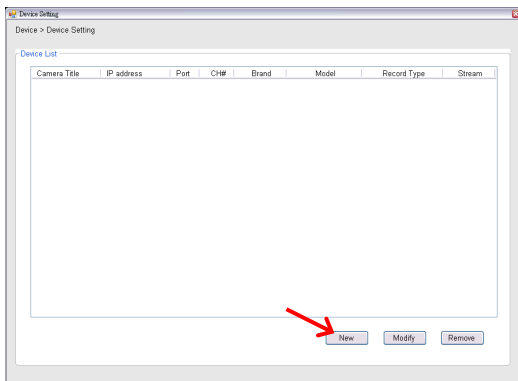
Before you can access the camera, you have to add the camera to the system.

■ Adding a Camera

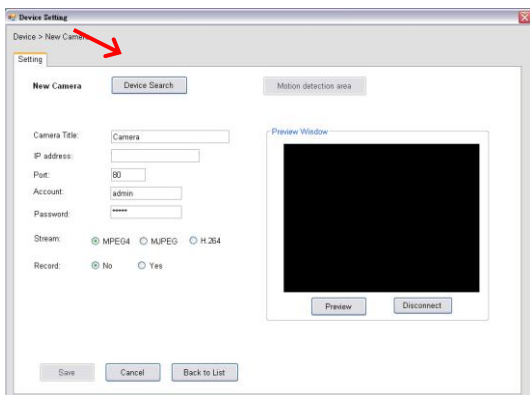
1. Click the  button and select **Device Setting** to display the Device Setting window.



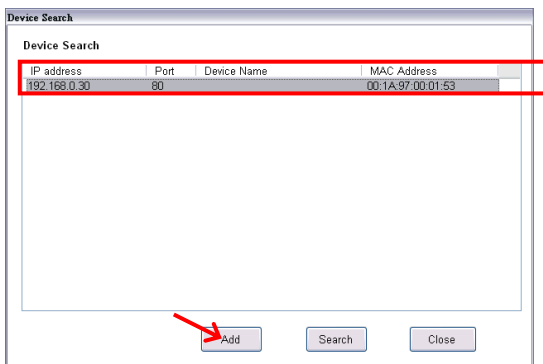
2. Click **New**.



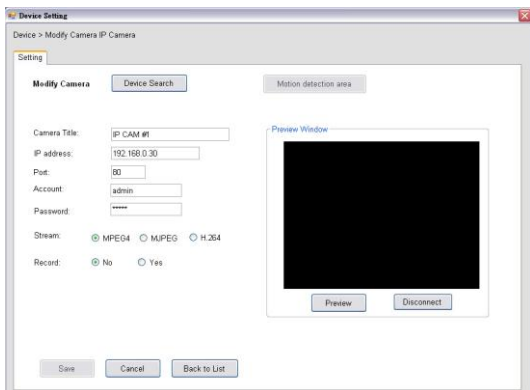
3. Click **Device Search** to search the camera(s) within your network.



4. Click **Search** to find the IP address of the connected camera(s). When search is finished, select the camera and click **Add**.



5. The information of the camera will be displayed on the window.



Option	Description
Camera Title	You have to assign a descriptive name for the camera.
IP Address	Display the IP address of the camera.
Port	Display the port path of the camera.
Account	Display the user name for accessing the camera.
Password	The password for accessing the camera will not be displayed.
Stream	Select the stream type as MPEG4 , MJPEG , or H.264 .
Record	Select Yes or No to set up recording function of the camera.
Preview Window	<p>This window allows you to preview the image of the camera.</p> <p>NOTE You MUST click Preview to display the image before clicking Motion detection area and Save to complete the camera installation; click Disconnect to stop previewing.</p>


6. When done, click **Save** and then click **OK** to return to the Device Setting window.

The added camera will be displayed in the Device List.

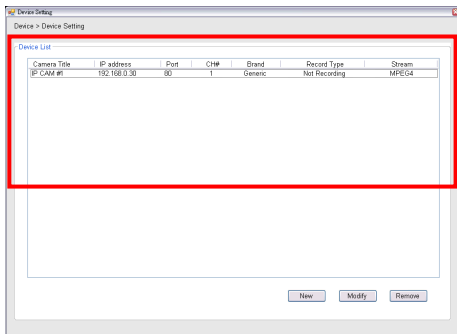
7. Click the “X” button on the Device Setting window to return to the Main window. The image of the camera will be displayed.



■ Editing / Deleting a Camera

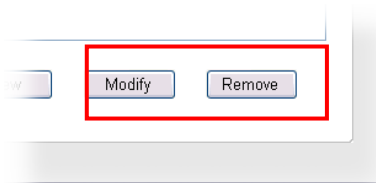
Since you have added camera(s) to the system, you can select one to edit or remove. Click the  button and select **Device Setting** to display the Device Setting window.

1. On the Device Setting window, the connected camera(s) will be displayed in the Device List.




2. **To delete the camera:** select the desired one and then click **Remove**. When prompted, click **Yes** and then select **OK** to confirm deletion.


To change the configuration of the camera: select the desired one and then click **Modify**. The Modify Camera window will appear that allows you to change the configuration of the camera. When completed, click **Preview** to display the image before clicking **Save** and then click **OK** to return to the Device Setting window.

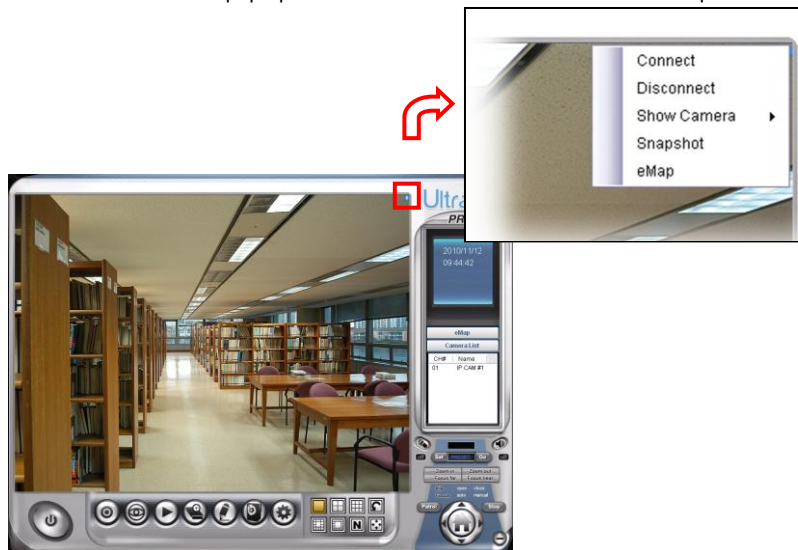


■ Viewing Image of the Camera

Since you have added camera(s) to the system, the image of the selected camera(s) will be displayed on the Live View Window automatically. You can view a maximum of 32 cameras simultaneously. Additionally, you can select one-camera or other view mode to display the video from the Camera View Mode buttons.

For example, if you use only one camera, select single camera view mode (), and the Live View Window will display the view as below. You can select the other modes according to your need.


The **Information icon** () on the top-right corner of the window provides you with the options to connect/disconnect the camera, select a camera to be displayed in the window, capture a still image of the camera live video, or switch to eMap mode. Click the Information icon to pop up the shortcut menu and select the desired option.



5.3.4 Recording / Playing Video

You have to assign the target folder for saving the recorded files before recording.

■ Configuring the Recording Settings

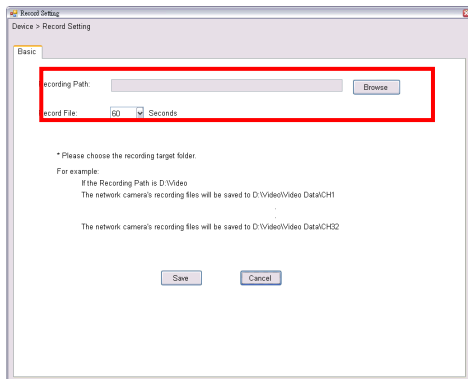
1. Click the  button and then select **Record Setting**.



2. To assign the target folder for saving the recorded files, click the **Browse** button next to the **Recording Path** option, and then select the desired directory.

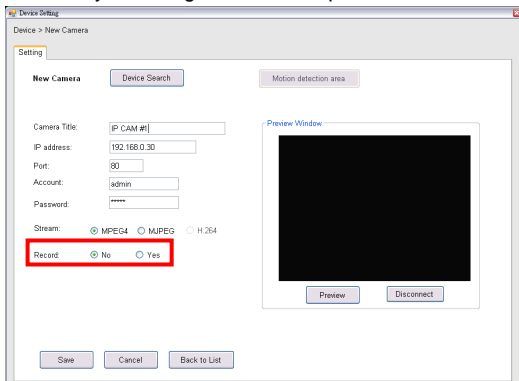
To change the time of recording, select the desired time setting from the **Record File** pull-down menu.


When completed, click **Save**



■ Enabling / Disabling Recording

While you are adding/editing the camera, you can enable the recording function for the camera by selecting the **Record** option.



Alternately, you can set all cameras to start/stop recording when you connect multiple cameras. Click the  button and select **All Continuous Recording** to set all cameras to start recording, or select **Stop All Recording** to set all cameras to stop recording.




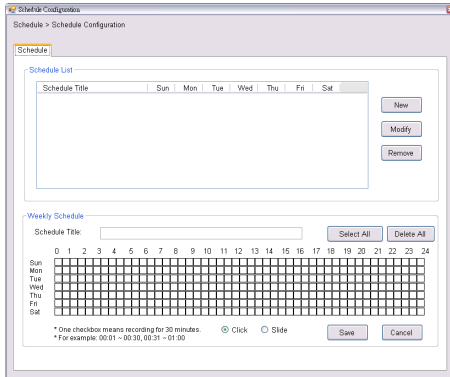
Since you have enabled the recording function of the camera, it will automatically start recording and save the video clips. The recording time of each file is set to 60 seconds by default.

NOTE The system will automatically delete the oldest files when storage space is running out.

■ Setting up Schedule for Recording


The system features the schedule recording so that you can set up the schedule to record as you need.

Click the  button to display the Schedule Configuration window, which allows you to configure the recording schedule.



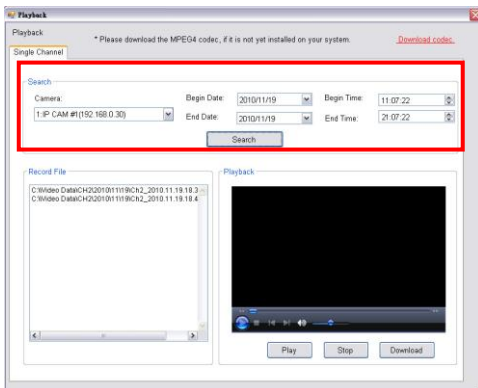
1. Click **New**, and then enter the Schedule Title.
2. Select the checkboxes below the Schedule Title to set the time to record video. One checkbox stands for 30 minutes of recording time. You can choose to assign the single checkbox repeatedly by using Click, or assign a period of time by using Slide. Alternately, you can quickly select/cancel the checkboxes by clicking **Select All** or **Delete All**.
3. When completed, click **Save**. The schedule profile will be added to the Schedule List.
4. To edit the schedule, select the desired schedule profile from the list, and then change the settings by using the **Modify** or **Remove** button.

■ Playback the Recording Files

1. Click the  button to display the Playback window.

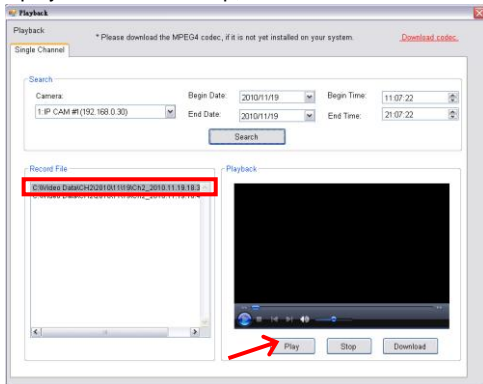


2. On the Playback window, set the conditions for search, such as selecting the camera and setting the begin/end date and begin/end time. When the search condition has been set, click **Search**.



The search result will be displayed in the Record File list.


3. To playback the video clip, select the desired file and click **Play**.

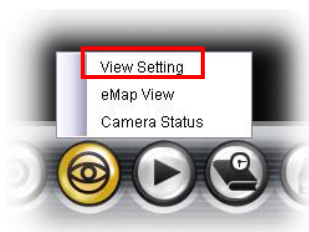


NOTE Codec is required for the system to play the video files. If the video clips cannot be displayed in the Playback window normally, click link on the screen.

5.4 Configuring UltraView Pro

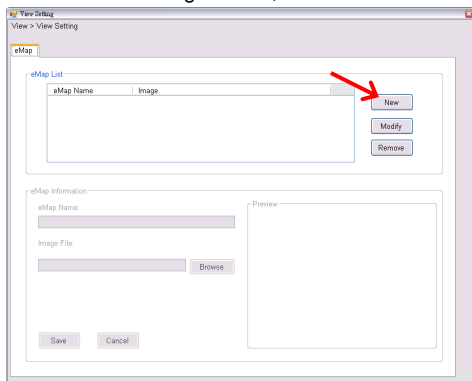
5.4.1 Configuring the eMap View Setting

Click the  button and select **View Setting** to configure the camera view setting of eMap mode.

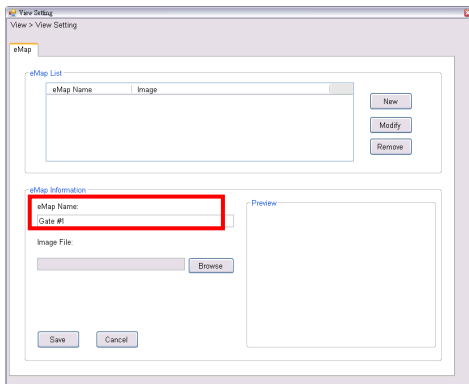


eMap refers to the geography and device scope of the UltraView Pro, which visually presents the devices in your security system. It uses a background of the area (e.g. a picture or a map) as the interface for monitoring.

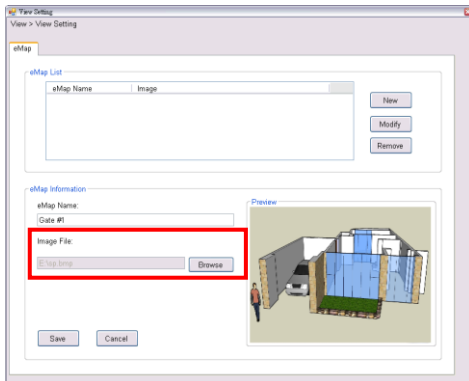
1. On the View Setting window, click **New**.



2. Enter the **eMap Name**.

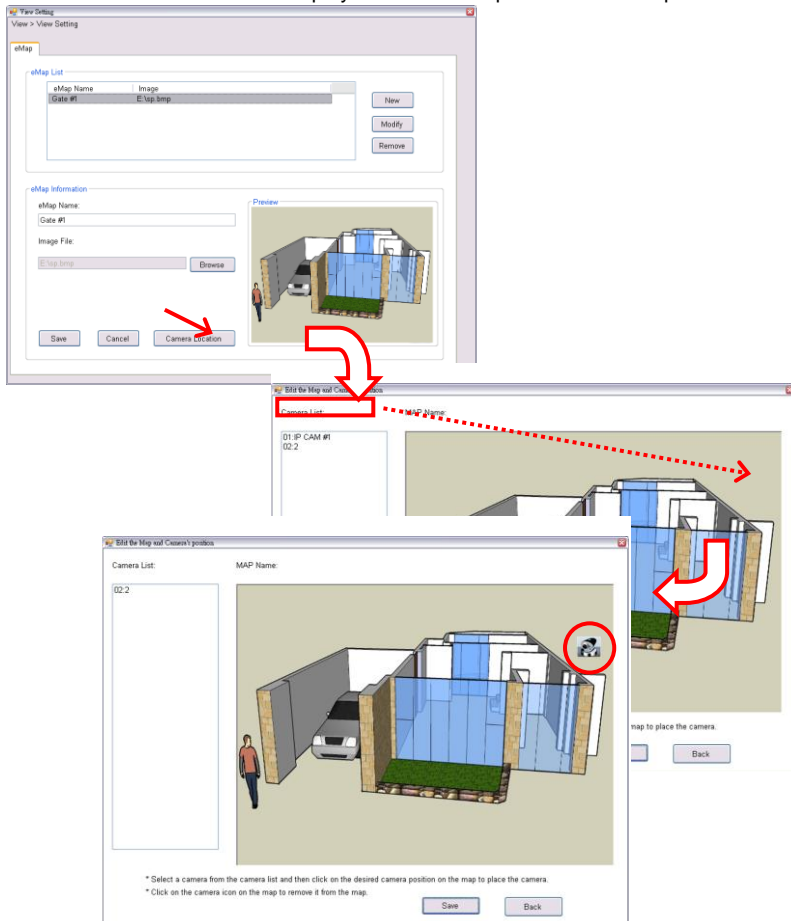


3. Click **Browse** to select a **Picture File** from your computer. The selected picture will be displayed in the Preview window.

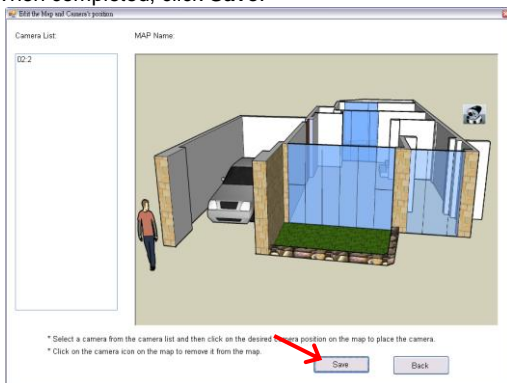


When completed, click **Save**.


4. On the following window, you can assign the camera position in the eMap. Click the **Camera Location** button to display the Edit window. Select the camera from the Camera List, and then click the mouse on the desired position of the map. The camera icon will be displayed on selected position of the map.

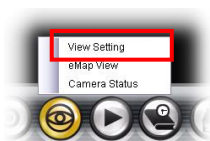


5. When completed, click **Save**.



6. To view from eMap:

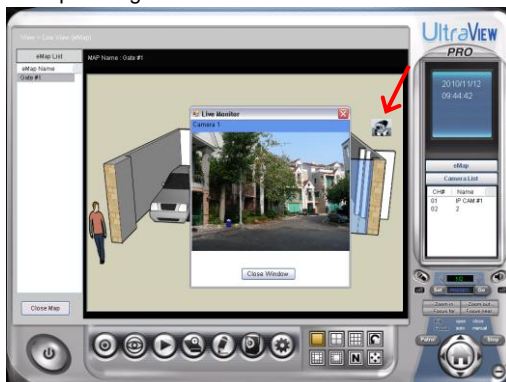
a. Click the  button and select **eMap View**.




b. Select the map from the eMap Name list.



- c. Click the camera icon, the camera window will then pop up to display the on-the-spot image.




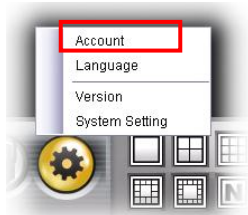
■ Editing / Deleting the eMap

1. Click the  button and select **View Setting**.
2. **To edit the eMap:** In the eMap List, select the desired map and click **Modify**.
The map's information will be displayed, where you can change the map's information and then click **Save** when completed.
3. **To delete the eMap:** In the eMap List, select the desired one and click **Remove**.
The selected map will be removed from the list.

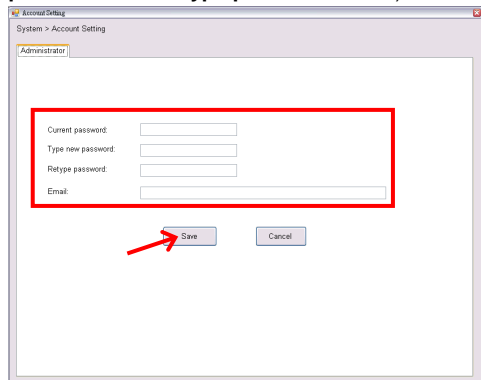
5.4.2 Configuring the System

■ User Management

Click the  button and select **Account** to change the administrator password for the system.



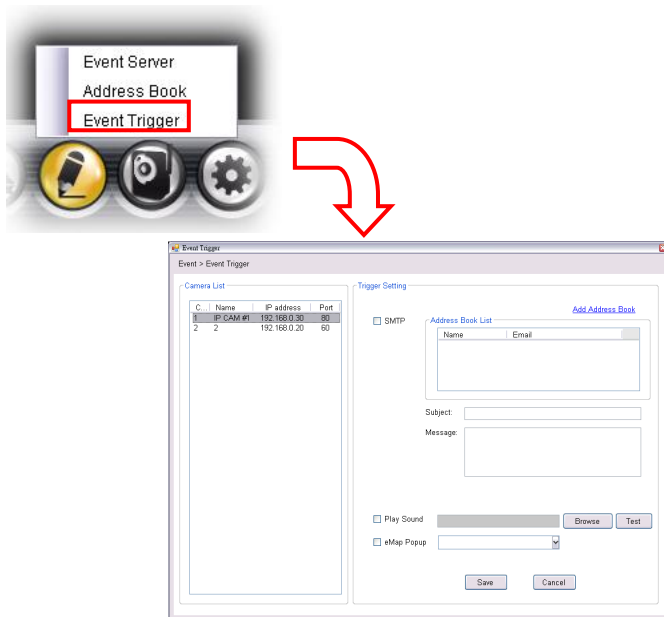
Enter the **Current password**, and then enter the new password twice (in the **Type new password** and **Retype password** boxes). When completed, click **Save**.

A screenshot of a dialog box titled 'System > Account Setting'. Inside the dialog, there is a tab labeled 'Administrator'. Below the tab, there are four input fields: 'Current password', 'Type new password', 'Retype password', and 'Email:'. The first three fields are grouped together and enclosed in a red rectangular box. At the bottom of the dialog, there are two buttons: 'Save' and 'Cancel'. A red arrow points to the 'Save' button.

5.4.3 Event Configuration

■ Configuring Event Trigger


Click the  button and select **Event Trigger** to configure the trigger out function of the camera.

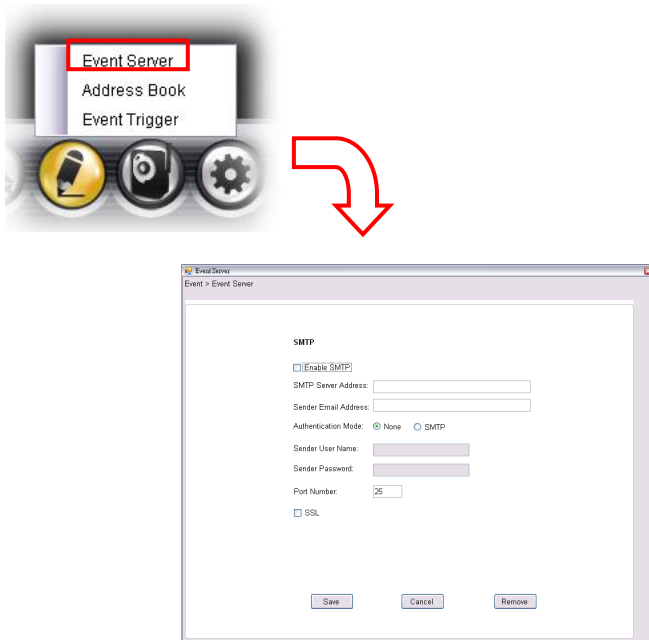


1. On the Event Trigger window, select the desired camera from the Camera List.
2. Do one of the following:
 - **SMTP:** Select this option and enter the Subject and Message, the system will send an email message to the selected user(s) in the Address Book List.
 - **Play Sound:** Select this option select a sound file from the computer, so that the system will alarm by the sound while triggering out.

- **eMap Popup:** Select this option and select the eMap profile from the pull-down menu. The camera view of the eMap will be displayed while triggering out.

■ Setting up Event Server

Click the  button and select **Event Server** to configure the SMTP server, so that you can send emails that include still images as notification.




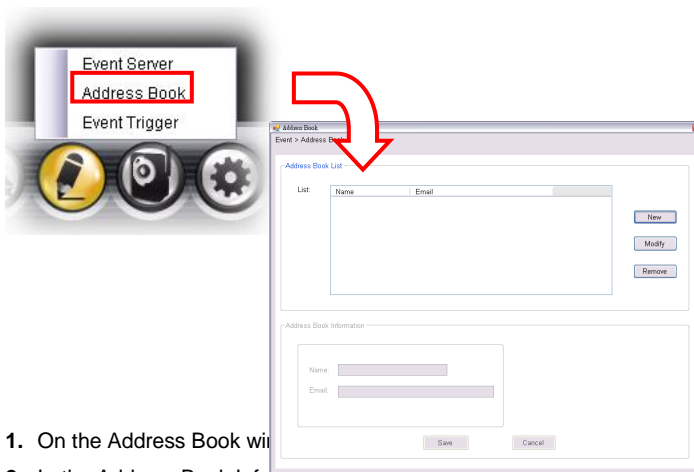
Select the **Enable SMTP** option to start the email service of the system. When you enable the service, you have to complete the following settings.

- **SMTP Server Address:** Enter the mail server address.
For example, mymail.com.
- **Sender Email Address:** Enter the email address of the user who will send the email. For example, John@mymail.com.
- **Authentication Mode:** Select **None** or **SMTP** according to the mail server configuration.
- **Sender User Name:** Enter the user name to login the mail server.
- **Sender Password:** Enter the password to login the mail server.
- **Port Number:** Enter the port number used for the email server.

When completed, click **Save** and then select **OK**. The system will automatically start the Event Service.


■ Sending Notification to the User

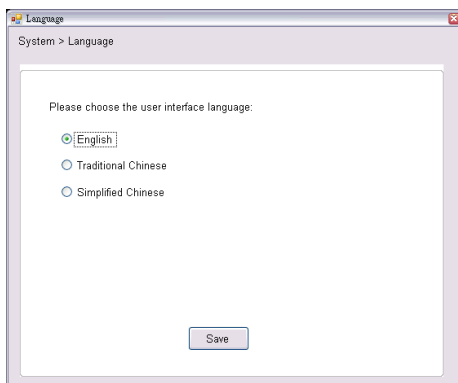
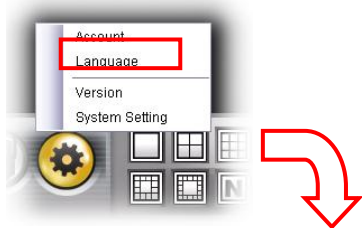
Click the  button and select **Address Book** to assign the user to the Address Book of the camera. The user will receive a real-time notification from the system while triggering out.




1. On the Address Book window, click the **Address Book** button.
2. In the Address Book Information field, enter the **Name** and **Email** of the user.
3. When completed, click **Save**. The user will be displayed in the Address Book List.
4. **To edit the user:** In the Address Book List, select the desired user and click **Modify**. The user's information will be displayed, where you can change the user's information and then click **Save** when completed.
5. **To delete the user:** In the Address Book List, select the desired user and click **Remove**. The selected user will be removed from the list.

5.4.4 Changing System Language

Click the  button and select **language** to change the displayed system language. On the Language screen, select the preferred language (**English**, **Traditional Chinese**, or **Simplified Chinese**) and click **Save**.



5.4.5 Terminating Operation

When you have finished operating, click the  button and select **Logout** to logout the system or **Close** to exit the program.

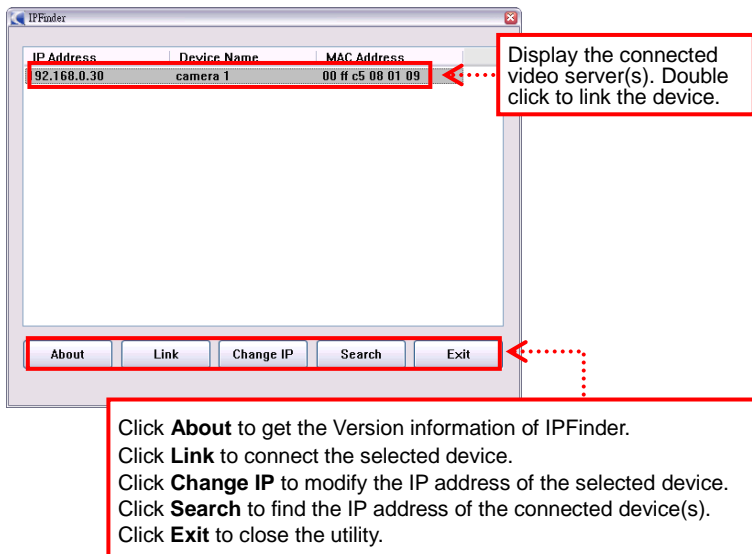


5.5 Using IPFinder

IPFinder allows you to easily search the device, such as the Internet camera and video server, within your network.

1. Click **Start** → **Programs** → **UltraView Pro** → **IPFinder**.

Alternatively, you can start the program by double-clicking the program icon on the desktop of your computer.



2. Once you get the IP address of the device, launch the Web browser or UltraView Pro to access your device.

CHAPTER 6

Remote Live View

6.1 Overview

www.c4mi.com is a website which provides the essential functionalities for users to manage their C4mi-licensed devices. Users can register, activate, control their devices and effectively manage accounts through this website. The following user guide will walk you through the steps you need in order to take full advantage of the functionalities that the website has to offer.

6.2 Instructions

WEB: C4mi

6.2.1 User Registration

A) Logging In

Log on to www.c4mi.com.


B) First-time

User

If you are a first-time user, please click on the Register button to register.

C) Registration Information

Enter your email, display name, and password in the pop-up dialog box.



Language ▼

Register

Email :

Display Name :

Password :

Re-enter Password :

Register

Cancel

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3.1.

Enter a working email address. The system will display an error message if you enter an email address that has already been registered or if you enter an invalid email address.

3.2.

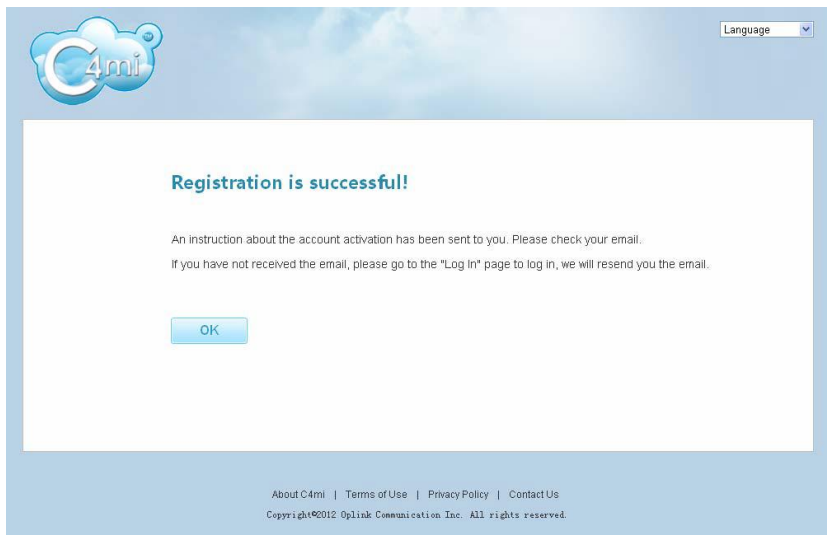
Enter a display name. Your display name can contain a combination of alphabetical and numerical characters and can be no more than 20-character long.

3.3.

Enter and re-enter password. Password can contain alphabetical and numerical characters and must be at least 6-character long. The length of your password cannot exceed 20 characters.

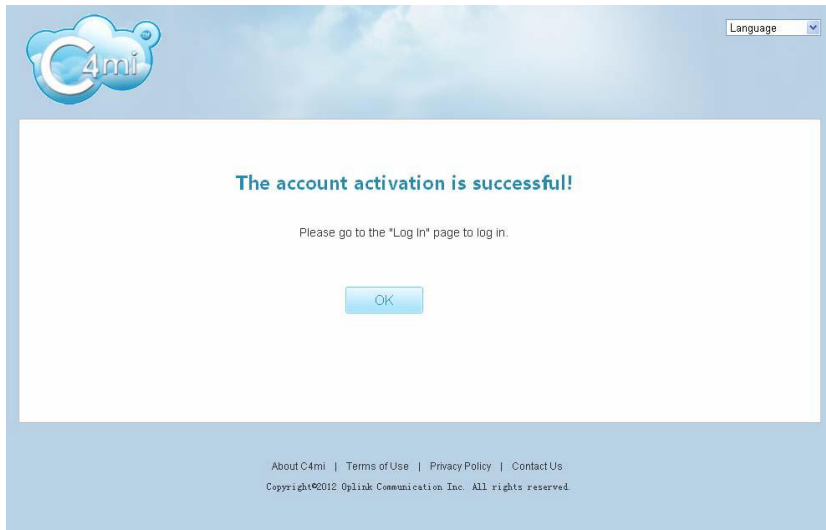
D) Successful Registration

Click on the Register button when you have entered all the required information. The following webpage will appear to confirm your registration.



E) Account Activation Confirmation

Check the email which you have provided to C4mi upon registration. You will receive a system-generated email message which contains an account activation link. Click on the activation link and you will be directed to the following webpage which confirms your account activation.

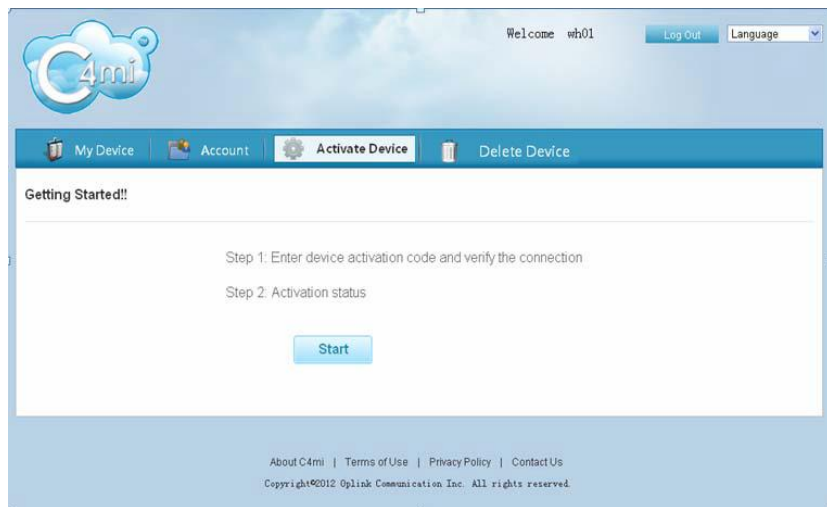


6.2.2 Activating Devices

You can activate your device by entering the correct device activation code. Once your device is successfully activated, you can start viewing the video image generated by your device.

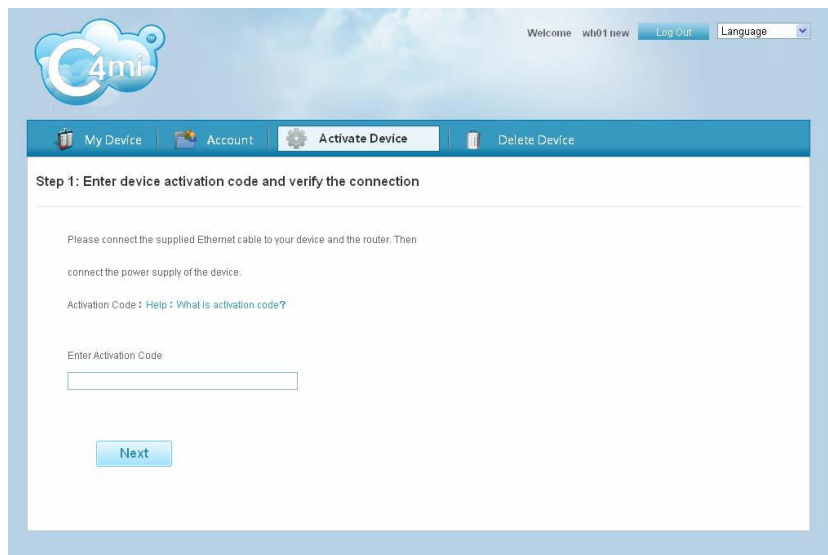
A) Activating Device

1. Click on the Activate Device button to start the device activation process.



2.

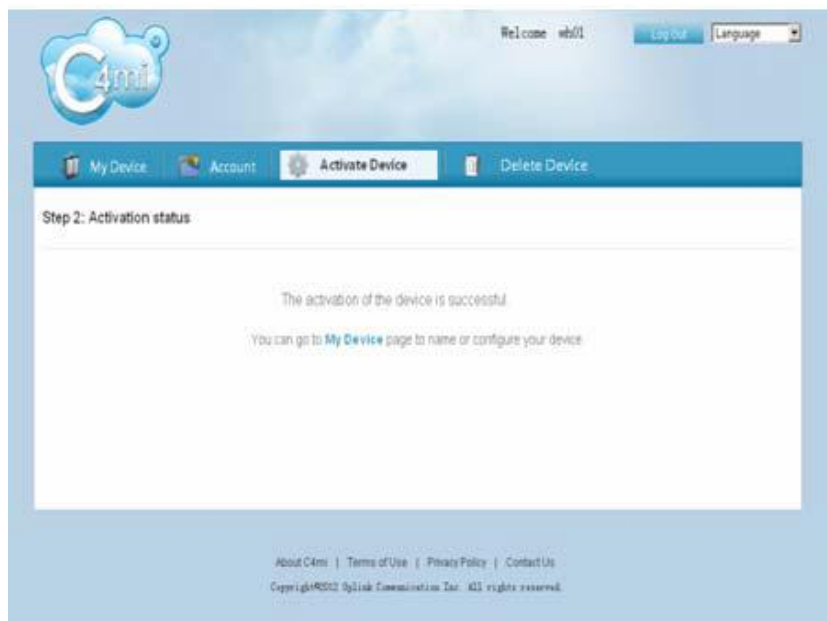
Click on the Start button. As the following webpage has indicated, enter the device activation code and click the Next button.



The screenshot shows the C4mi web interface. At the top left is the C4mi logo. At the top right, it says "Welcome wh01 new" with a "Log Out" button and a "Language" dropdown menu. Below this is a navigation bar with four tabs: "My Device", "Account", "Activate Device" (which is highlighted), and "Delete Device". The main content area is titled "Step 1: Enter device activation code and verify the connection". It contains the following text: "Please connect the supplied Ethernet cable to your device and the router. Then connect the power supply of the device." followed by "Activation Code : [Help](#) : [What is activation code?](#)". Below this is a text input field labeled "Enter Activation Code:". At the bottom of the form is a blue "Next" button.

3.

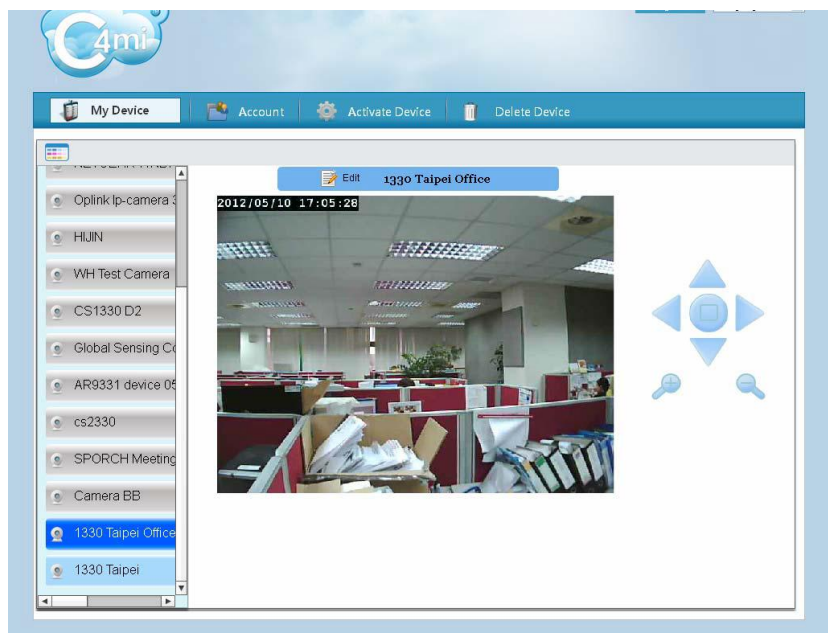
The system will display the following webpage once the inputted activation code was correctly entered. The system will display an error message if the activation code field is left in blank or an invalid activation code is entered.



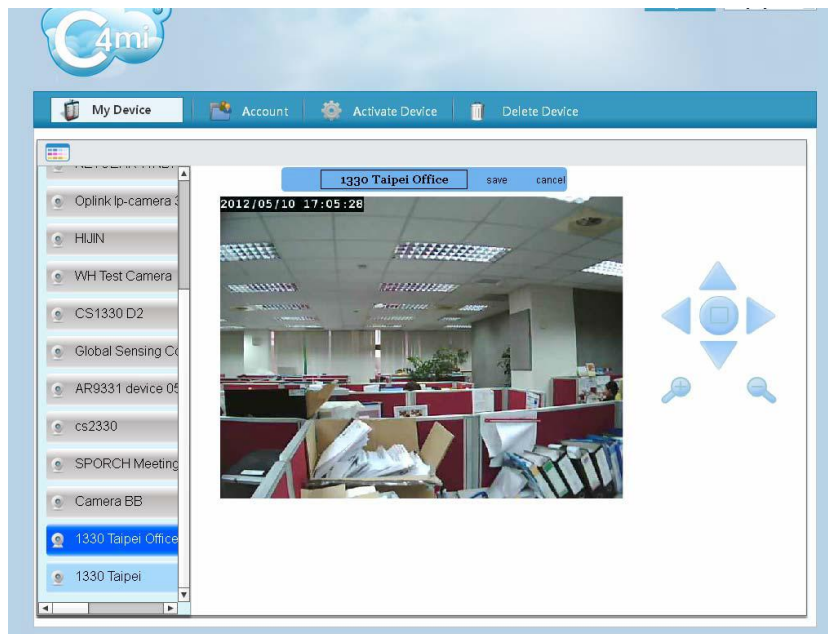
6.2.3. My Device

A) Looking Up Devices


- Your device will be automatically added to My Device list once it is successfully activated.
- Click on any of the device on the device list appeared on the left to view the real-time image from the selected device.
- You can control the direction of the camera lens by clicking on ▲, ▼, ◀ or ▶ buttons.
- Click on the Edit icon next to the camera name to edit the name of the device.

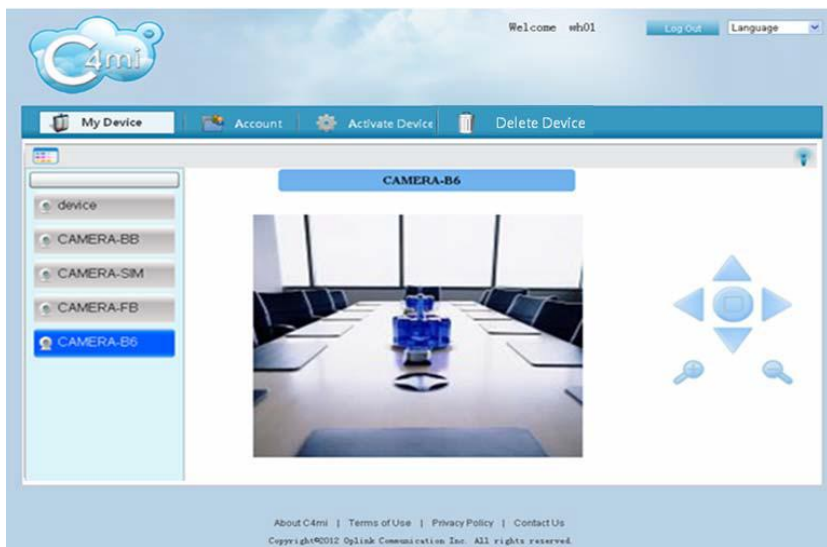


Click on save to save the modification or click on cancel to cancel the edit process.

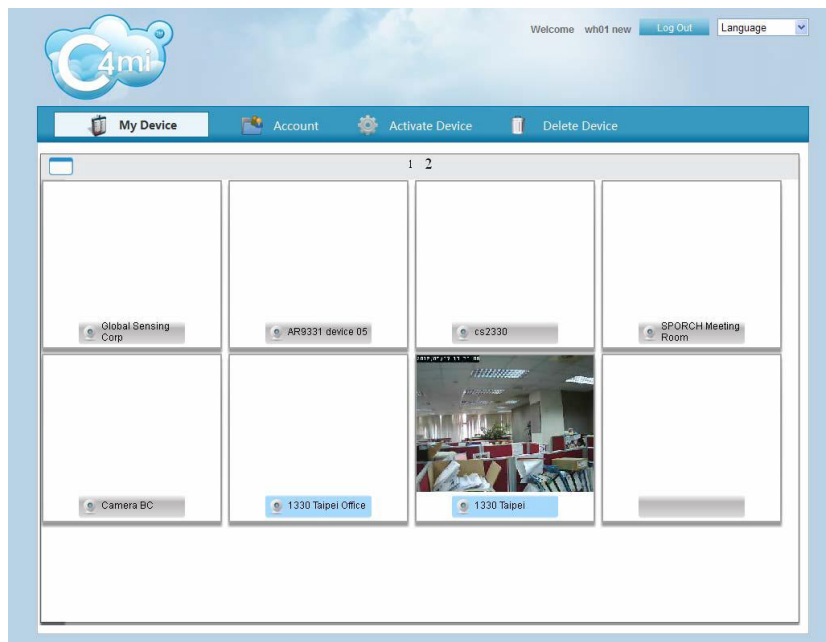



B) Viewing 8Video Images

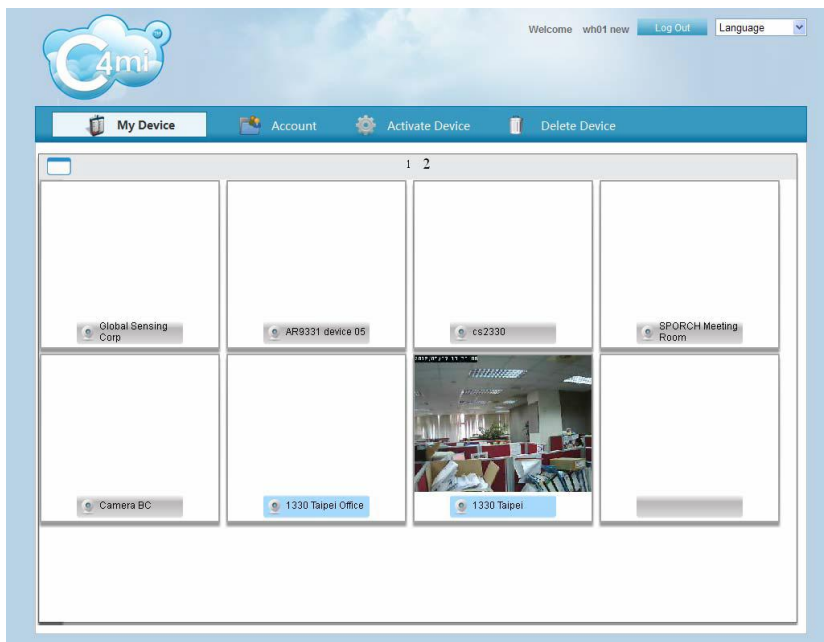
Click on the  button to view up to 8 camera images at a time.



Click on any of the camera buttons to view a single video image. Click on the page number to view the desired real-time video image(s). You can view up to 8 video images per page and up to 16 from a total of 2 pages.

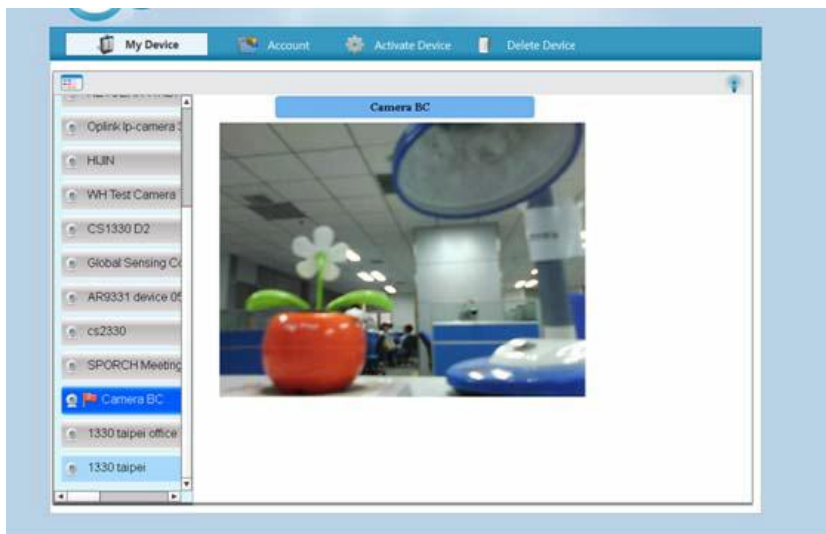


Click on the  button on the 8-video webpage to return to My Device webpage.

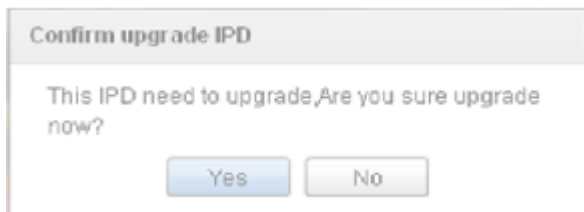


C) Upgrading Your IPD

The red flag next to an IPD indicates that an IPD upgrade application is now available.



Click on the red flag icon and the system will display the following dialog box to confirm your upgrade request.



- Click on the “Yes” button to start the upgrading process. Your IPD status will be offline while undergoing the upgrading process.
- The device will return to the online status once it has completed the upgrading process. Click on the “NO” button to cancel the upgrade request.

6.2.4. Setting Up Accounts

A) Account Information

Welcome wh01 new Log Out Language

My Device Account Activate Device Delete Device

Account Information

If you will not change your password, just leave "Old Password", "New Password" and "Re-enter New Password" empty.

Display Name : wh01 new

Old Password :

New Password :

Re-enter New Password :

Update

1. You can update your display name and password by clicking on the Account tab.

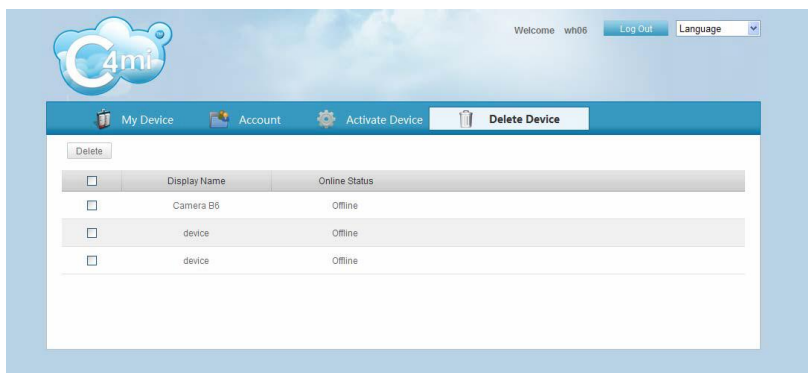
2.

- Enter a new display name. Display name can include a combination of alphabetical and numerical characters.
- Maximum length of your display name is 20 characters.
- The display name field cannot be left blank; otherwise the system will generate an error message.

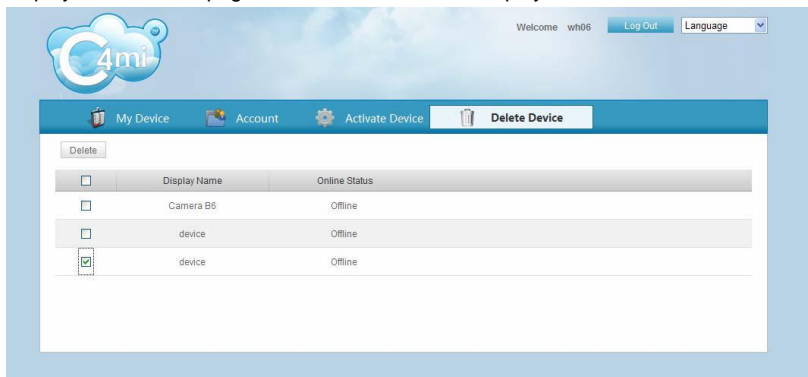
3. Password can be left in blank. Should you decide to reset your password, you may include a combination of alphabetical and numerical characters and the length must be at least 6-character long. The maximum length of your password is 20 characters.
4. Click on the Update button to complete your account updating process.

6.2.5. Deleting Devices

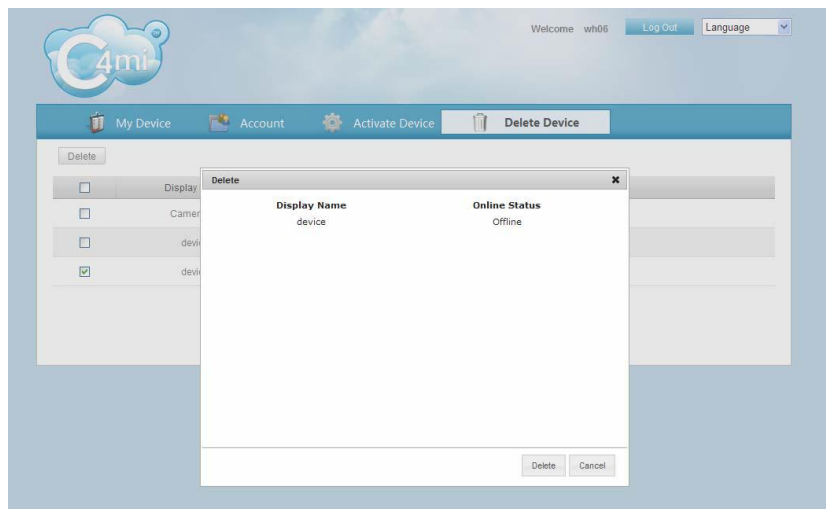
Click on Delete Device the webpage will display all the devices you are authorized to view.



Check the box (es) next to the device(s) which you wish to delete. To delete all devices displayed on the webpage, check the box next to Display Name.



After checking the box (es) next to the device(s) you wish to delete, click on the Delete button. The system will pop up a confirmation dialog box. Click on the Delete button to delete the selected device(s) or click on Cancel to exit the confirmation dialog box.

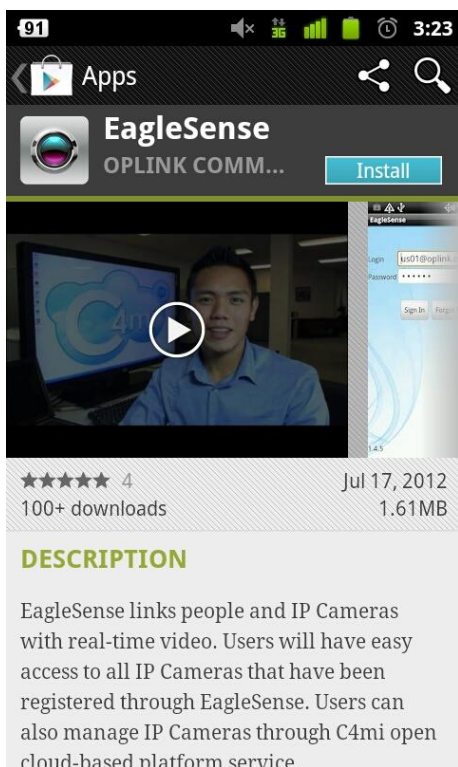


APP: EAGLESENSE

6.3 Operating Eaglesense

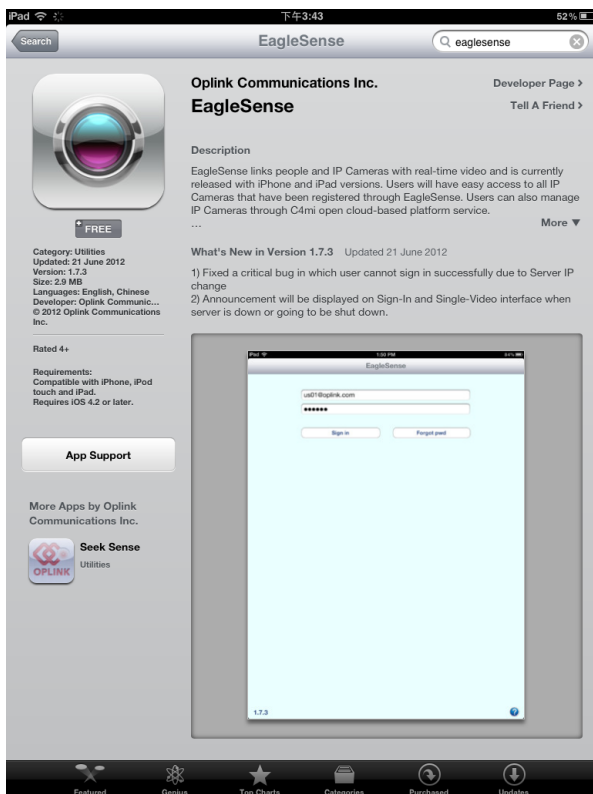
1. Please find “EagleSense” app from Andriod Google Play or iTunes App Store and download before using.
2. For the first-time user, if you haven't registered on C4mi, please go to www.c4mi.com. to register.
3. If you already registered on C4mi, please use the same email address and password to log in to EagleSense.

Andriod Google Play



The screenshot shows the Google Play Store interface for the EagleSense app. At the top, the status bar shows the time as 3:23 and various icons. Below the status bar, the word "Apps" is visible. The app's icon, a stylized eye, is shown next to the app name "EagleSense" and the subtitle "OPLINK COMM...". A blue "Install" button is present. Below the app information, there is a video preview showing a man in a blue shirt speaking, with a play button overlay. To the right of the video, a smaller image shows the app's login screen with fields for "Email" and "Password", and "Sign In" and "Forgot Password" links. Below the video, the app has a rating of 4 stars (★★★★★ 4) and "100+ downloads". The release date is "Jul 17, 2012" and the file size is "1.61MB". The "DESCRIPTION" section follows, stating: "EagleSense links people and IP Cameras with real-time video. Users will have easy access to all IP Cameras that have been registered through EagleSense. Users can also manage IP Cameras through C4mi open cloud-based platform service."

iTunes App Store



6.3.1 Logging In

Open EagleSense application login page. Enter account User ID, password then tap the Sign in button to log in to the system. (User ID and password are the same as your registered C4mi account) Tap on HELP on the bottom right hand corner to enter C4mi website Help link.



6.3.2 Viewing Videos

A) Start Viewing Videos

On the camera list, tap the camera from which you wish to view the desired image.



B) Pinch to Zoom

Touch your iPhone screen with two fingers. Close two fingers to zoom in and open two fingers to zoom out the image you wish to enlarge or shrink. The frame at the bottom left corner exhibits the displayed area of the image.




C) Moving Images Around

When the image is in zoom mode, drag the displayed image to your preferred location. The frame at the bottom left corner exhibits the current image movement.



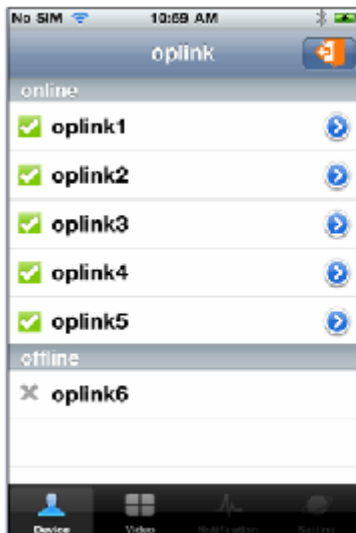
D) Stop Viewing Videos

Tap the  button at the bottom right corner to exit the video viewing page and return to the device list page.



E) Updating Device Information

Tap the icon of the camera to which you wish to update information, and you will be directed to the device info page. Enter the desired information to update the device info. Tap the Save button to save the inputted information.



6.3.3 Viewing Images Generated from Multiple Videos

EagleSense Application allows you to view up to 4 videos on your iPhone and 8 on your iPad. You will operate iPad the same way you operate your iPhone. The following steps walk you through the set up process needed in order to view multiple video images from your iPhone.

A) Viewing 4Video Images

- Tap the Video button at the bottom of your iPhone screen.
- The following 4 video images will appear (The system displays the images from the 4 cameras you previously selected.)
- Tap any of the 4 images and the screen will display the image which you selected.



B) Viewing 8Video Images

- Tap the Video button at the bottom of your iPad screen.
- A maximum of 8 video images will appear (the system displays the images from the 8 cameras which you have previously selected.)
- Tap any of the 8 images and the screen will display the video image which you selected.



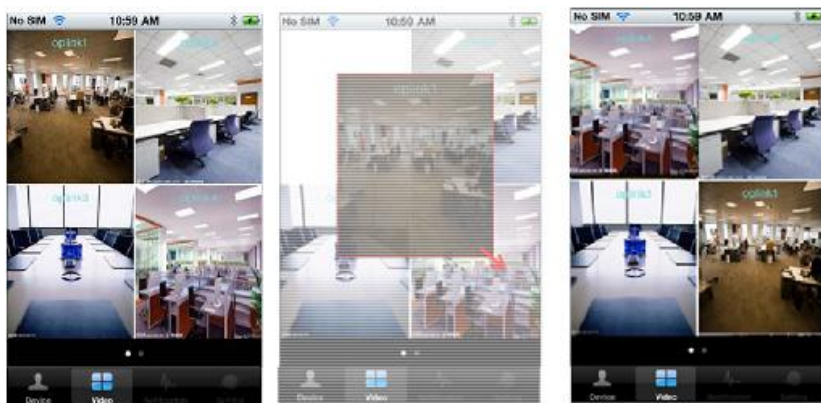
C) Viewing More Videos

Swipe the screen to view more videos.



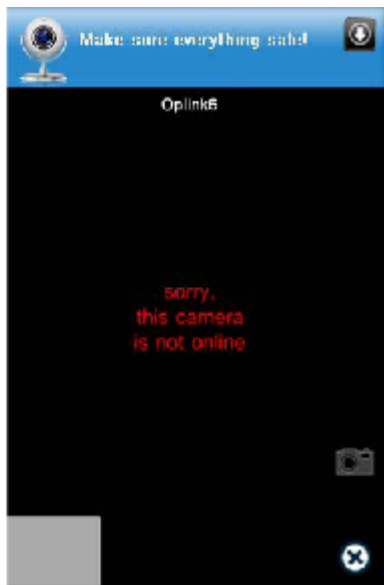
D) Changing the Displayed Location of the Selected Video

If you wish to change the displayed location of a particular video image, simply press down the image and drag it to your preferred location.




E) Offline Cameras

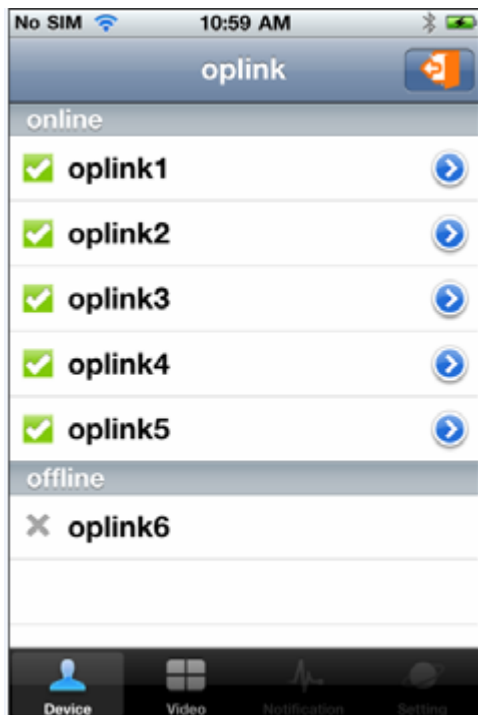
When you attempt to view an image from an offline camera, a message will appear to indicate that the image is currently unavailable due to camera's offline status. When you press down the camera to show the single image, the screen will display the same message. (As shown below)



6.3.4 Exiting EagleSense

Return to the device list page.

Tap the  icon to exit EagleSense Application.



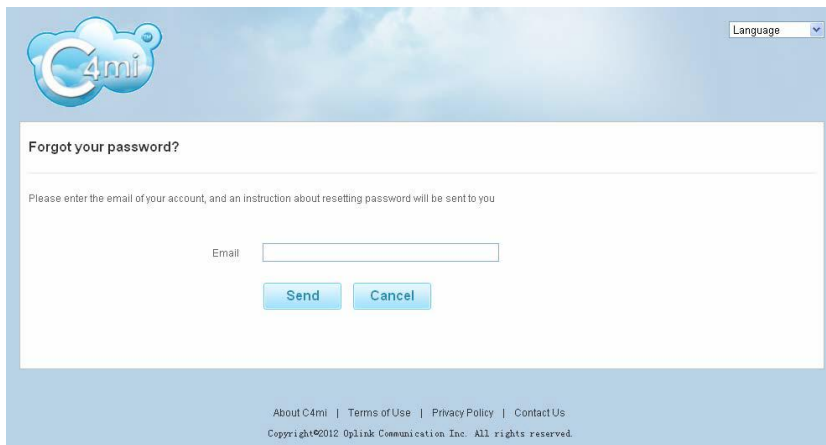
6.4 Frequently Asked Questions

6.4.1 The webpage cannot be displayed, what should I do?

For your c4mi webpage to be normally displayed, you need Firefox 11.0 or above, IE 8 or above, or Chrome 12.0 or above.


6.4.2 I forgot my password, how can I reset one?

1. Log on to www.c4mi.com and click on the Forget Password button.
2. In the Forget your password pop-up dialog box, enter the email address which you have provided to C4mi upon registration. Click on Send button after you have made sure that you have entered the correct email address.



The screenshot shows a web browser window with the C4mi logo in the top left corner. In the top right corner, there is a 'Language' dropdown menu. The main content area is a white dialog box titled 'Forgot your password?'. Below the title, it says 'Please enter the email of your account, and an instruction about resetting password will be sent to you'. There is a text input field labeled 'Email'. Below the input field are two buttons: 'Send' and 'Cancel'. At the bottom of the browser window, there is a footer with links: 'About C4mi | Terms of Use | Privacy Policy | Contact Us' and a copyright notice: 'Copyright©2012 OpLink Communication Inc. All rights reserved.'

3. Check the email address you used to register and you should receive an email message which contains the password reset link. Click on the link and you will be taken to the following password reset dialog box. Start resetting your password.

Language ▼

Reset your Password

To reset your password, please enter your new password.

New Password:

Re-enter Password:

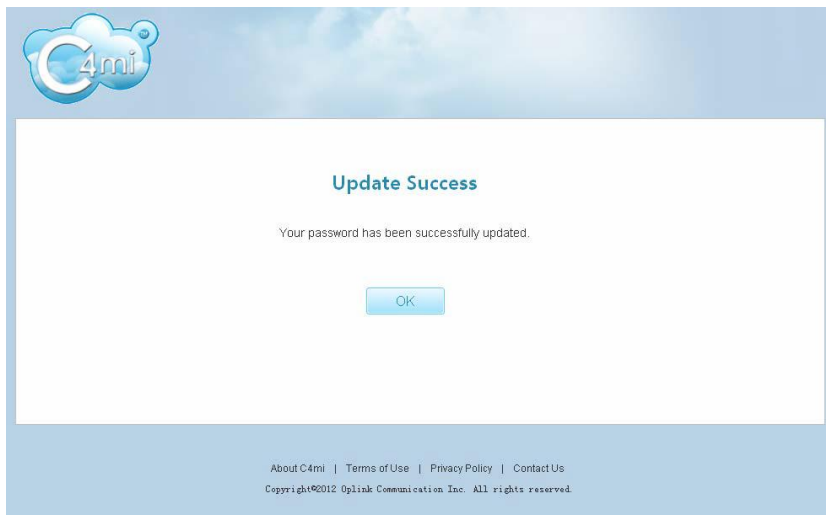
Send

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4. Enter and re-enter your new password.

The passwords must match; otherwise the system will generate an error message. Click on the Send button.

5. The following webpage indicates that you have successfully reset your password.



6. You may now log in with your newly setup password.

6.4.3 How do I download user client?

Log on to www.c4mi.com to access the website.

You may download Eaglesense App from App store if your device runs on iOS. For Android 2.2 or above users: You may download EagleSense App from Google Play. Eaglesense does not support Android 2.1 or below.

CHAPTER 7

APPENDIX.

Glossary of Terms

NUMBERS

10BASE-T	10BASE-T is Ethernet over UTP Category III, IV, or V unshielded twisted-pair media.
100BASE-TX	The two-pair twisted-media implementation of 100BASE-T is called 100BASE-TX.

A

ADPCM	Adaptive Differential Pulse Code Modulation, a new technology improved from PCM, which encodes analog sounds to digital form.
AMR	AMR (Adaptive Multi-Rate) is an audio data compression scheme optimized for speech coding, which is adopted as the standard speech codec by 3GPP.
Applet	Applets are small Java programs that can be embedded in an HTML page. The rule at the moment is that an applet can only make an Internet connection to the computer from that the applet was sent.
ASCII	American Standard Code For Information Interchange, it is the standard method for encoding characters as 8-bit sequences of binary numbers, allowing a maximum of 256 characters.
ARP	Address Resolution Protocol. ARP is a protocol that resides at the TCP/IP Internet layer that delivers data on the same network by translating an IP address to a physical address.
AVI	Audio Video Interleave, it is a Windows platform audio and video file type, a common format for small movies and videos.

B

BOOTP	Bootstrap Protocol is an Internet protocol that can automatically configure a network device in a diskless workstation to give its own IP address.
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C

Communication	Communication has four components: sender, receiver, message, and medium. In networks, devices and application tasks and processes communicate messages to each other over media. They represent the sender and receivers. The data they send is the message. The cabling or transmission method they use is the medium.
Connection	In networking, two devices establish a connection to communicate with each other.
D	
DHCP	Developed by Microsoft, DHCP (Dynamic Host Configuration Protocol) is a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. In some systems, the device's IP address can even change while it is still connected. It also supports a mix of static and dynamic IP addresses. This simplifies the task for network administrators because the software keeps track of IP addresses rather than requiring an administrator to manage the task. A new computer can be added to a network without the hassle of manually assigning it a unique IP address. DHCP allows the specification for the service provided by a router, gateway, or other network device that automatically assigns an IP address to any device that requests one.
DNS	Domain Name System is an Internet service that translates domain names into IP addresses. Since domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses every time you use a domain name the DNS will translate the name into the corresponding IP address. For example, the domain name <code>www.network_camera.com</code> might translate to <code>192.167.222.8</code> .
E	
Enterprise network	An enterprise network consists of collections of networks connected to each other over a geographically dispersed area. The enterprise network serves the needs of a widely distributed company and operates the company's mission-critical applications.

Ethernet	The most popular LAN communication technology. There are a variety of types of Ethernet, including 10Mbps (traditional Ethernet), 100Mbps (Fast Ethernet), and 1,000Mbps (Gigabit Ethernet). Most Ethernet networks use Category 5 cabling to carry information, in the form of electrical signals, between devices. Ethernet is an implementation of CSMA/CD that operates in a bus or star topology.
F	
Fast Ethernet	Fast Ethernet, also called 100BASE-T, operates at 10 or 100Mbps per second over UTP, STP, or fiber-optic media.
Firewall	Firewall is considered the first line of defense in protecting private information. For better security, data can be encrypted. A system designed to prevent unauthorized access to or from a private network. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially Intranets all messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.
G	
Gateway	A gateway links computers that use different data formats together.
Group	Groups consist of several user machines that have similar characteristics such as being in the same department.
H	
HEX	Short for hexadecimal refers to the base-16 number system, which consists of 16 unique symbols: the numbers 0 to 9 and the letters A to F. For example, the decimal number 15 is represented as F in the hexadecimal numbering system. The hexadecimal system is useful because it can represent every byte (8 bits) as two consecutive hexadecimal digits. It is easier for humans to read hexadecimal numbers than binary numbers.
I	
Intranet	This is a private network, inside an organization or company that uses the

	same software you will find on the public Internet. The only difference is that an Intranet is used for internal usage only.
Internet	The Internet is a globally linked system of computers that are logically connected based on the Internet Protocol (IP). The Internet provides different ways to access private and public information worldwide.
Internet address	To participate in Internet communications and on Internet Protocol-based networks, a node must have an Internet address that identifies it to the other nodes. All Internet addresses are IP addresses
IP	Internet Protocol is the standard that describes the layout of the basic unit of information on the Internet (the packet) and also details the numerical addressing format used to route the information. Your Internet service provider controls the IP address of any device it connects to the Internet. The IP addresses in your network must conform to IP addressing rules. In smaller LANs, most people will allow the DHCP function of a router or gateway to assign the IP addresses on internal networks.
IP address	IP address is a 32-binary digit number that identifies each sender or receiver of information that is sent in packets across the Internet. For example 80.80.80.69 is an IP address. When you "call" that number, using any connection methods, you get connected to the computer that "owns" that IP address.
ISP	ISP (Internet Service Provider) is a company that maintains a network that is linked to the Internet by way of a dedicated communication line. An ISP offers the use of its dedicated communication lines to companies or individuals who can't afford the high monthly cost for a direct connection.
J	
JAVA	Java is a programming language that is specially designed for writing programs that can be safely downloaded to your computer through the Internet without the fear of viruses. It is an object-oriented multi-thread programming best for creating applets and applications for the Internet, Intranet and other complex, distributed network.

L

LAN

Local Area Network a computer network that spans a relatively small area sharing common resources. Most LANs are confined to a single building or group of buildings.

M

MJPEG

MJPEG (Motion JPEG) composes a moving image by storing each frame of a moving picture sequence in JPEG compression, and then decompressing and displaying each frame at rapid speed to show the moving picture.

MPEG4

MPEG4 is designed to enable transmission and reception of high-quality audio and video over the Internet and next-generation mobile telephones.

N

NAT

Network Address Translator generally applied by a router that makes many different IP addresses on an internal network appear to the Internet as a single address. For routing messages properly within your network, each device requires a unique IP address. But the addresses may not be valid outside your network. NAT solves the problem. When devices within your network request information from the Internet, the requests are forwarded to the Internet under the router's IP address. NAT distributes the responses to the proper IP addresses within your network.

Network

A network consists of a collection of two or more devices, people, or components that communicate with each other over physical or virtual media. The most common types of network are:

LAN – (local area network): Computers are in close distance to one another. They are usually in the same office space, room, or building.

WAN – (wide area network): The computers are in different geographic locations and are connected by telephone lines or radio waves.

NWay Protocol

A network protocol that can automatically negotiate the highest possible transmission speed between two devices.

P

PCM	PCM (Pulse Code Modulation) is a technique for converting analog audio signals into digital form for transmission.
PING	Packet Internet Groper, a utility used to determine whether a specific IP address is accessible. It functions by sending a packet to the specified address and waits for a reply. It is primarily used to troubleshoot Internet connections.
PPPoE	Point-to-Point Protocol over Ethernet. PPPoE is a specification for connecting the users on an Ethernet to the Internet through a common broadband medium, such as DSL or cable modem. All the users over the Ethernet share a common connection.
Protocol	Communication on the network is governed by sets of rules called protocols. Protocols provide the guidelines devices use to communicate with each other, and thus they have different functions. Some protocols are responsible for formatting and presenting and presenting data that will be transferred from file server memory to the file server's net work adapter Others are responsible for filtering information between networks and forwarding data to its destination. Still other protocols dictate how data is transferred across the medium, and how servers respond to workstation requests and vice versa. Common network protocols responsible for the presentation and formatting of data for a network operating system are the Internetwork Packet Exchange (IPX) protocol or the Internet Protocol (IP). Protocols that dictate the format of data for transferors the medium include token-passing and Carrier Sense Multiple Access with Collision Detection (CSMA/CD), implemented as token-ring, ARCNET, FDDI, or Ethernet. The Router Information Protocol (RIP),a part of the Transmission Control Protocol/Internet Protocol (TCP/IP) suite, forwards packets from one network to another using the same network protocol.
R	
RJ-45	RJ-45 connector is used for Ethernet cable connections.
Router	A router is the network software or hardware entity charged with routing packets between networks.

RTP	RTP (Real-time Transport Protocol) is a data transfer protocol defined to deliver live media to the clients at the same time, which defines the transmission of video and audio files in real time for Internet applications.
RTSP	RTSP (Real-time Streaming Protocol) is the standard used to transmit stored media to the client(s) at the same time, which provides client controls for random access to the content stream.
S	
Server	It is a simple computer that provides resources, such as files or other information.
SIP	SIP (Session Initiated Protocol) is a standard protocol that delivers the real-time communication for Voice over IP (VoIP), which establishes sessions for features such as audio and video conferencing.
SMTP	The Simple Mail Transfer Protocol is used for Internet mail.
SNMP	Simple Network Management Protocol. SNMP was designed to provide a common foundation for managing network devices.
Station	In LANs, a station consists of a device that can communicate data on the network. In FDDI, a station includes both physical nodes and addressable logical devices. Workstations, single-attach stations, dual-attach stations, and concentrators are FDDI stations.
Subnet mask	In TCP/IP, the bits used to create the subnet are called the subnet mask.
T	
(TCP/IP)	Transmission Control Protocol/Internet Protocol is a widely used transport protocol that connects diverse computers of various transmission methods. It was developed by the Department of Defense to connect different computer types and led to the development of the Internet.
Transceiver	A transceiver joins two network segments together. Transceivers can also be used to join a segment that uses one medium to a segment that uses a different medium. On a 10BASE-5 network, the transceiver connects the network adapter or other network device to the medium. Transceivers also can be used on 10BASE-2 or 10BASE-T networks to attach devices with AUI ports.

U

UDP	The User Datagram Protocol is a connectionless protocol that resides above IP in the TCP/IP suite
User Name	The USERNAME is the unique name assigned to each person who has access to the LAN.
Utility	It is a program that performs a specific task.
UTP	Unshielded twisted-pair. UTP is a form of cable used by all access methods. It consists of several pairs of wires enclosed in an unshielded sheath.

W

WAN	Wide-Area Network. A wide-area network consists of groups of interconnected computers that are separated by a wide distance and communicate with each other via common carrier telecommunication techniques.
WEP	WEP is widely used as the basic security protocol in Wi-Fi networks, which secures data transmissions using 64-bit or 128-bit encryption.
Windows	Windows is a graphical user interface for workstations that use DOS.
WPA	WPA (Wi-Fi Protected Access) is used to improve the security of Wi-Fi networks, replacing the current WEP standard. It uses its own encryption, Temporal Key Integrity Protocol (TKIP), to secure data during transmission.
WPA2	Wi-Fi Protected Access 2, the latest security specification that provides greater data protection and network access control for Wi-Fi networks. WPA2 uses the government-grade AES encryption algorithm and IEEE 802.1X-based authentication, which are required to secure large corporate networks.